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1990 66th
annual

SUMMARY OF ILLINOIS FARM BUSINESS RECORDS

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COMMERCIAL FARMS: Production / Costs / Income / Investments

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN / COLLEGE OF AGRICULTURE / COOPERATIVE EXTENSION SERVICE

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CONTENTS

Source of Data	1
Uses for This Report	1
Definition of Terms and Accounting Methods.....	2
Soil-productivity rating	2
Hay equivalents, tons	2
Sampling technique	2
Type of farm	2
Cost items	2
Return items	3
Recent Changes in Income on Illinois Farms	3
Farm business trends in 1990	3
Labor and management income	4
Family living expenditures	5
Income changes on Illinois farms	6
Northern and central Illinois farms	8
Southern Illinois farms	11
Livestock Enterprises	13
Hog enterprises	14
Feeder-cattle and feeder-pig finishing enterprises	16
Dairy enterprises	18
Beef-cow herds	19
Sheep enterprises	20
Costs, Returns, Financial Summaries, Investments, Land Use, and Crop Yields for Different Sizes and Types of Illinois Farms.....	22

SOURCE OF DATA

This report is based on data obtained from farm business records on 7,192 Illinois farms. It is the 66th annual summary of such records obtained from farmers cooperating with the University of Illinois Cooperative Extension Service, the Department of Agricultural Economics, and the Illinois Farm Business Farm Management (FBFM) Association.

At present, about one out of every five Illinois commercial farms with over 500 acres and one out of every four Illinois farms with total farm sales over \$100,000 is enrolled in this service, which grew steadily until 1982. Except for 1988, enrollment has declined slightly each year since 1982. One factor contributing to this decline has been the lower levels of farm income during the last half decade, resulting in fewer farm operators. In 1991, 10 associations in 102 counties are being served by 69 full-time field staff and one half-time field staff member. Participation in this farm-business analysis program is voluntary; cooperating farmers pay a fee for the educational services.

The program's development since 1940 is shown below.

Year	Associations	Counties participating	Field staff employed	Farmers enrolled
1940	3	23	3	680
1950	8	59	15	2,760
1960	10	100	33	5,494
1970	10	102	42	6,553
1980	10	102	67	8,205
1990	10	102	70	7,192

Estimates for 1990 indicate that 90 percent of the 7,192 farms covered in this report are larger than 240 acres. For the most part, this 90 percent falls within the size of business that includes farms selling \$50,000 or more of farm products per year. In the 1987 Census of Agriculture, farms selling \$50,000 or more accounted for 87 percent of all sales from Illinois farms.

The segment of Illinois agriculture that includes farms with more than 180 acres is often referred to as "commercial farming." In 1987, there were 44,810 farms in Illinois with more than 180 acres and with sales of \$10,000 or more. The figures that follow, taken from the 1987 Census of Agriculture, show that these farms represented 76 percent of the 59,181 farms larger than 50 acres and that these farms produced more than 98 percent of the agricultural products sold from Illinois farms.

Acres per farm	Percent of all farms over 50 acres	Percent of census farms enrolled in FBFM	Number of farms enrolled in FBFM
180-499	43.1	9.3	2,374
500-999	24.1	17.8	2,537
1,000+	8.5	19.6	983

Although most of the 1990 recordkeeping farms covered in this report are within the two smaller size groups, the figures show that they are not distributed proportionately among the groups. There were 5,017 farms identified by the Census with more than 1,000 acres in 1987. About a fifth of these farms (19.6 percent) were enrolled in the Illinois FBFM Association. Of the 14,257 farms in the group having from 500 to 999 acres, 17.8 percent also participated in the farm record program. Only about 5 percent of the farms enrolled had fewer than 160 acres. The average size of all farms enrolled in 1990 was 717 acres, compared with an average of 343 acres for all Illinois farms.

The data presented in this report are group averages identified by size of business, type of farm, and quality of soil found on the farm. Where segments of Illinois agriculture are identified by these criteria, the data from recordkeeping farms may be used with reasonable confidence, even though the recordkeeping farms as a group do not represent a cross section of all commercial farms in the state.

USES FOR THIS REPORT

The management of a modern commercial farm involves decision making in the application of technology, the choice of a proper combination of crop and livestock enterprises, and effective business administration of the farming operations. A basic analysis of a farm business involves a careful study of past performance to detect problems and strengths in the farming operation. Also involved is the process of planning and developing future operations to realize the full potential of the land, labor, and capital resources available and to improve the economic efficiency of the farm business.

The farm-business summaries contained in this report are used by individual farmers to analyze their business operations and to develop plans for future farming operations. This report summarizes the information so that specialists involved in agricultural extension, research, teaching, and agribusiness activities may use the data to help them perform their duties effectively. The definition of terms and accounting measures on the following pages will be of assistance in using the data.

The first part of the report (Tables 2 to 8) summarizes recent changes in farm income on Illinois farms. It also identifies economic forces and factors that contribute to these changing trends. The data presented in Tables 5 through 8 are the total of operator and landlord data. Some data used in the text are drawn from previous issues of this report.

The second section (Tables 9 to 18) presents data on livestock enterprises. The comprehensive and detailed information contained in this section is a val-

JAN 29 1992

uable resource for anyone interested in livestock production. Because part of the feed grains and roughages produced on Illinois farms is marketed through livestock, the margins of income from livestock enterprises are important in interpreting the economic results of some farming operations.

The third section (Tables 19 to 27a) discusses costs, returns, financial summaries, investments, land use, and crop yields for different sizes and types of farms in northern, central, and southern Illinois. It is the total of operator and landlord data. It reports on the 25 percent of grain farms that received the highest return to management per dollar of cost and the 25 percent that received the lowest return. It also reports on two-man and three-man hog and beef farms. A two-man hog and beef farm uses from 21 to 27 months of labor; a three-man hog and beef farm, from 31 to 39 months.

DEFINITION OF TERMS AND ACCOUNTING METHODS

Soil-productivity rating

This rating is an average index representing the inherent productivity of all tillable land on the farm. Individual soil types on each farm are assigned an index ranging downward from 100. All ratings were revised in 1971 to reflect a basic level of management as outlined in Circular 1156 of the Illinois Cooperative Extension Service, *Soil Productivity in Illinois*. New land values were assigned in 1980. The annual change in land values represents an accounting adjustment to bring land values to current market levels.

Hay equivalents, tons

To get the equivalents, we took the total of 1.0 multiplied by the pounds of hay, 0.45 multiplied by the pounds of hay silage, 0.33 multiplied by the pounds of corn silage, and 24 multiplied by the pasture days per feed unit (which are also multiplied by the total feed units per cow). This total is then divided by 2,000.

Sampling technique

Data from all records certified for analysis by field staff were aggregated by size (acres or number of cows), type of organization, value of the feed fed, and soil-productivity rating. Electronic data-processing was used to summarize the data.

Type of farm

Grain farms are farms where the value of the feed fed was less than 40 percent of the crop returns and where the value of feed fed to dairy or poultry

was not more than a sixth of the crop returns. Since 1973, farms with livestock have been essentially excluded from the sample of grain farms in northern and central Illinois in Table 19; since 1978, from the grain-farm sample in Table 20; and since 1982, from the grain-farm sample in Table 5.

Hog or beef farms are farms where the value of feed fed was more than 40 percent of the crop returns and where either the hog or beef-cattle enterprise received more than half of the value of feed fed.

Dairy farms are farms where the value of feed fed was more than 40 percent of the crop returns and where the dairy enterprise received more than one-third of the value of feed fed.

Cost items

The *value of feed fed* includes on-the-farm grains with the following average prices per bushel: corn, \$2.44; oats, \$1.25; and wheat, \$3.09. Commercial feeds were priced at actual cost, hay and silage at farm values, and pasture at 40 cents per animal unit per pasture day. A pasture day represents an intake of about 20 to 25 pounds of dry matter, defined as 16 pounds of total digestible nutrients (TDN) from the pasture used.

Cash operating expenses include the annual cash outlays for these nondepreciable items: fertilizer, pesticides; seeds (including homegrown seeds); machinery repairs; machine hire and lease; fuel and oil; the farm share of electricity, telephone, and light vehicle expenses; building repairs; drying and storage; hired labor; livestock expenses; taxes; insurance; and miscellaneous expenses. Purchased feed, grain, and livestock are not included because they have been deducted from gross receipts in computing the value of farm production. The interest paid is not included because an interest charge is made on the total farm investment. But the total interest paid by the operator only on all debt—operating debt plus longer-term debt—is listed separately in Tables 19a to 27a under "Selected Cost and Return Items per Tillable Acre."

Machinery and equipment include depreciation, repairs, machine hire and lease, fuel and oil, and the farm share of electricity, telephone, and light vehicle expenses.

Labor includes hired labor plus family and operator's labor, charged in 1990 at \$1,350 a month.

Interest on nonland capital covers the interest charged at 10 percent on the sum of one-half the average of the January 1 and December 31 inventory values of grain, plus the average of the January 1 and December 31 inventories of remaining capital investment in livestock, machinery and auto, buildings, and soil fertility, plus one-half the cash-operating expense, exclusive of interest paid. In Tables 5, 7, and 8, this charge is combined with the land charge or net rent and labeled interest charge on capital. The average cash interest paid per farm by all farm

operators was \$15,507. Details on operator and landlord shares of expenses and income are published annually in research reports by the Department of Agricultural Economics.

Land charge or net rent is the bare land priced at current land values multiplied by 4.5 percent to reflect net rents received by the landlord.

Total nonfeed costs include cash-operating expenses, adjustments for accrued expenses and farm-produced inputs, depreciation, and charges for unpaid labor and interest including land charge. Purchased feeds and livestock are omitted.

The *basic value of land* (the *current basis*) is adjusted each year according to the February index of land prices in Illinois as reported by the United States Department of Agriculture (USDA). An additional adjustment was made to this index in 1984 to reflect the large drop in land values. The land value index for 1990, using a base earning value of 1979 = 100, was 65.

The *capital account adjustment* includes the gain or loss on capital items sold, plus the adjustments to capital items for basis lost or basis recovered when the 10 percent investment tax credit is selected for income tax reporting.

Return items

Crop returns are the sum of grain, seed and feed sales, the value of homegrown seed used, the value of all feed fed (except milk), government-deficiency and diverted-acre payments received and accrued, and the change in value for feed and grain inventories, less the value of feed and grain purchased. Government PIK (payment in kind) certificates purchased to redeem grain under government loan are included in the feed-and-grain purchase account.

The *total value of farm production* is the cash and accrued value of sales of products and services, less the cost of purchased feed, grain, and livestock, plus the change in inventory values for grain and livestock, plus the value of farm products used.

Net farm income is the value of farm production, less total operating expenses and depreciation, plus gain or loss on machinery or buildings sold, with a cost-basis adjustment when the 10 percent investment credit for income tax reporting is selected. Net farm income includes the return to the farm and family for unpaid labor, the interest on all invested capital, and the returns to management.

Labor and management income per operator is total net farm income, less the value of family labor and the interest—including net rent—charged on all capital invested. This figure, as the residual return to all unpaid operator's labor and management efforts, is then divided by the months of unpaid operator labor and multiplied by 12 to reflect income for one operator on multiple-operator farms.

Capital and management earnings are net farm income, less a charge for all unpaid labor.

Management return is the residual surplus after a charge for unpaid labor and the interest or land charge on capital are deducted from net farm income.

The *rate earned on investment* is capital and management earnings—interest on all capital and land charge, plus management returns—per \$100 of the total farm average annual investment.

RECENT CHANGES IN INCOME ON ILLINOIS FARMS

Farm business trends in 1990

Illinois agriculture is based largely on crop production, especially corn and soybeans. In 1989, Illinois ranked first in the nation in the production of soybeans and second in the nation in the production of corn. The total value of corn and soybeans produced on Illinois farms was 18 percent of the total U.S. production for these crops. In 1989, the total value was 57 percent of the total cash receipts in Illinois from all crops and livestock and 86 percent of the cash receipts from all crops sold.

Crops. Year-to-year variations in net income are related to crop yields, grain prices, and acres in high cash-value crops. Corn and soybean yields in 1990 were almost unchanged from 1989. In 1990, the average corn yield for Illinois was 127 bushels per acre, 4 bushels above 1989 but 8 bushels below the record yields set in 1985 and 1986. Recordkeeping farms averaged 132 bushels per acre in 1990, identical to the 1989 yield. Soybean yields were 39 bushels per acre in 1990, compared with 40 in 1989. Recordkeeping farms averaged 44 bushels per acre in 1990. Crop yields on the 7,192 recordkeeping farms covered in this report averaged 4 to 13 percent above the average for all Illinois farms reported by the Illinois Crop Reporting Service.

The prices received for all soybeans sold during the year averaged 85 to 93 cents per bushel below 1989 prices (Table 1). Corn prices received in 1990 averaged 6 to 10 cents less than those received in 1989. Wheat sold for 85 to 92 cents less per bushel during the year. Crops under loan with the Commodity Credit Corporation (CCC) and forfeited at the end of the loan period are included as grain sales. The selling price would be the loan rate for that particular crop. Positive marketing margins on old-crop corn inventoried at the beginning of the year averaged about 14 cents. Positive marketing margins on old-crop soybeans averaged 27 cents. The year-end, new-crop corn inventory price was 5 cents lower than it was the year before, and the year-end, new-crop soybean inventory price was 15 cents higher.

Production of the major crops in 1990 was similar to production levels of 1989. Compared to 1989,

Table 1. Average Prices Received and Paid by Farm Recordkeepers for Grain, Livestock, and Milk

	1990		1989	
	Northern Illinois	Southern Illinois	Northern Illinois	Southern Illinois
Grain prices per bushel				
Purchased — corn .	\$2.43	\$2.38	\$2.46	\$2.51
Sold — corn	2.38	2.40	2.44	2.50
soybeans	5.85	5.88	6.78	6.73
wheat	2.91	2.97	3.83	3.82
Livestock prices per cwt				
Hogs, all weights . .	\$53.69		\$43.24	
Fed cattle, all weights	76.40		72.37	
Feeder cattle, all weights, prices paid	85.42		81.10	
Dairy cattle, all weights	62.82		58.48	
Sheep and wool, all weights	58.62		59.61	
Milk per cwt	13.80		12.98	

corn and soybean production was virtually unchanged; oat production was down 28 percent; grain sorghum production was up 26 percent. Wheat production was down 13 percent from the record production in 1989 but was the third highest crop on record. Hay production was down 5 percent. The Illinois 1990 All Crop Production Index, using a base value of 1977 = 100, was 108.7. This figure was down slightly from the figure for the previous year, and up 66 percent from 1988. Acreages of corn harvested for grain decreased 3 percent from 1989 to 1990, while soybean acreage increased 3 percent from 1989. The acreage planted to soybeans was the largest since 1984. Wheat acreage harvested for grain increased 7 percent.

Conditions for planting the 1990 corn crop were not ideal. Corn planting began the last week of April but was delayed in certain areas due to an abnormally wet spring. Farmers planted 3 percent fewer acres of corn in 1990 than in 1989, but 7 percent more than in 1988. Corn planting finished two weeks behind normal in many areas of the state and almost a month behind normal in sections of southern Illinois. Excessive spring rains reduced plant populations. Crop development was behind schedule during the growing season due to the late planting.

Timely rains fell in most areas of the state during July and August. However, areas in the southern part of the state were extremely dry, resulting in lower-than-normal yields. Corn harvest began the last week of September and continued a week or more behind normal.

Soybean planting began in early May and progressed behind schedule due to wet weather conditions. Planting was finished during the first part of July, more than two weeks behind normal. Crop

development during the summer was behind average due to the late planting. Condition of the soybeans during the summer was mostly fair to good with timely rains benefiting the crop. Concern that an early frost would cause severe damage to the late crop was unwarranted as most of the crop matured before the first frost. Harvest began slowly but progressed rapidly in mid-October and finished near the average.

Livestock. A second major determinant in farm income is the price farmers receive for livestock and livestock products. In 1990, the average prices received by farm recordkeepers in the Illinois FBFM Association were 24 percent higher for hogs, 6 percent higher for fat cattle, and 6 percent higher for milk than they were in 1989 (Table 1). The prices paid for all weights of feeder cattle and feeder pigs averaged 5 percent above the 1989 price for feeder cattle and 38 percent above the 1989 price for feeder pigs. Higher returns due to higher prices received for fat cattle caused returns above feed and purchased animals for the feeder-cattle enterprise to increase from \$18.66 per hundredweight produced to \$25.74 (Table 10). Higher hog prices and stable feed costs increased returns above feed cost from \$16.71 per hundredweight produced to \$27.15. Returns above feed were above the 5-year average for 1986 through 1990 by \$5.26 per hundredweight produced and were the highest since 1982. Higher milk prices in 1990 made dairy returns above feed cost per cow the highest ever and 10 percent above the average for the 5-year period from 1986 through 1990.

Labor and management income

The average operator's share of labor and management income for the 5-year period from 1986 through 1990 on all northern Illinois recordkeeping farms (located north of a line from Kankakee to Moline) was \$18,132. Operators on 1,840 grain and hog farms in central Illinois had 5-year average earnings of \$22,317 (Table 2). Central Illinois occupies the area between the Kankakee-Moline line in the north and the Mattoon-Alton line in the south. Smaller farms and variable soil quality in northern Illinois have generated smaller earnings from crops. The farms in northern Illinois typically average 5 to 10 percent lower crop yields than those in central Illinois.

Northern Illinois has a heavier concentration of livestock, which had very good earnings in 1990. The difference in earnings between central and northern Illinois decreased by \$1,646 in a comparison of the 5-year averages for the periods from 1985 through 1989 and from 1986 through 1990. This is the fourth year out of the last five in which the difference in earnings between these areas has decreased. The recordkeeping farms in northern Illinois averaged 537 tillable acres per farm, compared with an average of 656 tillable acres on farms in central Illinois.

Table 2. Operator's Five-Year Average Share of Labor and Management Income by Size and Type of Farm, 1986 Through 1990

	Number of acres per farm			
	Under 340	340 to 649	650+	All
Northern Illinois				
Acres of tillable land	229	449	898	537
Labor and management earnings by type of farm				
Grain	\$ 3,945	\$15,779	\$26,902	\$18,726
Hog	20,133	21,431	34,511	23,556
Beef ^a	-590	12,246	11,907	9,516
Dairy	13,856	18,951	...	16,125
All	10,417	16,863	25,853	18,132
Central Illinois				
Acres of tillable land	245	480	918	656
Labor and management earnings by type of farm				
Grain ^b	\$ 7,745	\$18,183	\$33,396	\$24,166
Grain ^c	3,884	13,602	24,751	18,720
Hog	14,244	24,183	33,178	24,645
All	8,391	17,779	29,863	22,317
Southern Illinois				
Acres of tillable land	238	552	1,065	729
Labor and management earnings by type of farm				
Grain	\$ 5,228	\$10,808	\$24,521	\$18,847
Hog	16,718	28,539	...	25,886
Dairy	26,427	29,448	...	28,079
All	15,192	19,814	24,521	21,169

^a Includes central Illinois.

^b Highly productive soils with soil-productivity ratings from 86 to 100.

^c Heavy-till and transition soils with soil-productivity ratings from 56 to 85.

^d Data not available.

The figure for labor and management income varies considerably, depending on the location and type of farm. For the period from 1986 through 1990, operators in southern Illinois averaged \$21,169 for labor and management. This average increased by \$4,556, compared with the average for the 5-year period from 1985 through 1989. When the average earnings for the 5-year period from 1986 through 1990 are compared with the earnings from 1985 through 1989, earnings increased substantially in all three areas of the state.

In 1990, the labor and management income for all areas of Illinois averaged \$28,953 per farm. This figure is \$2,938 higher than the 1989 state average. Higher returns to livestock farms were the number 1 reason for increased incomes in 1990. Prices received for all major livestock commodities were above the previous year's prices while feed costs remained stable. Returns to grain farms were slightly lower in 1990 compared to 1989 due to a moderate increase in costs. Returns to labor and management were above the previous year's returns for hog and beef farms while returns to grain and dairy farms were slightly less than the previous year.

The income or salary of the farm operator—whether tenant or part-owner—is the return for the

labor and management provided by the operator. The level of income received is a measure of overall farming efficiency and includes compensation for the risk involved. The income includes the operator's gross sales and the net change in inventory. This income is reduced by operating expenses, depreciation, a charge for unpaid family labor, 10 percent interest on nonland investment, and a land-use charge equivalent to the average net rent received by landowners for crop-share leases from 1986 to 1989.

Whenever the income figures in Table 2 fall below the amounts required for living expenses and income and Social Security taxes, operators must use the charges deducted for interest on equity capital to pay these expenses. If we assume that \$30,000 is needed to pay living expenses and income and Social Security taxes, these figures for 5-year average, labor and management income indicate that to pay these expenses, the average farm operator's family uses between \$5,000 and \$20,000 of the return for equity capital, depending on the location and type of farm. Using part of the return to equity to pay family living expenses indicates that the farm operator is not receiving a competitive return to either his labor and management or his equity in the business. Off-farm income could be used to pay for some of the family living expenses.

Family living expenditures

Total cash living expenditures for a sample of 408 central Illinois, sole-proprietor, farm-operator families in 1990 averaged \$32,090 (Table 3). This figure is 13 percent higher than the 1989 average. Capital purchases for family living expenses of \$4,291 include the family's share of the auto, plus items that exceed \$250 and will last more than one year. Capital purchases for family living were 12 percent of the total cash outlay for all family living expenditures in 1990.

The average farmer in this sample paid \$15,070 in interest in 1990 on operating, machinery, and long-term real estate debts. This interest expense was 12 percent of total operating expenses (including interest paid) and 8 percent of total farm receipts, or \$21 per tillable acre farmed in 1990. The average amount of interest paid in 1990 was \$1,220 more than the amount paid in 1989. This is the second year in a row that the amount of interest paid exceeded the amount paid in the previous year.

The most significant financial facts about 1990 are as follows:

- Net farm income, plus net nonfarm income, was \$17,623 more than the sum of family living capital purchases, total living expenses, and payments for income and Social Security taxes. This margin was the largest for any year in the last decade;
- Liabilities of \$203,168 as of December 31, 1990, were 53 cents for each dollar of farm-only assets,

Table 3. Average Sources and Uses of Funds Over A Four-Year Period and by Noncapital Living Expenses for Selected Illinois Farms

	All records, average per farm				Family of 3 to 5, 1990	
	1990	1989	1988	1987	High-third ^a	Low-third
Number of farms	408	402	365	328	89	89
Tillable acres farmed	719	709	661	665	865	610
Acres owned	120	119	116	119	102	110
Farm assets, January 1 ^b	\$358,394	\$335,756	\$321,422	\$327,059	\$376,341	\$301,633
Farm assets, December 31 ^b	384,363	335,420	303,897	326,706	410,277	328,407
Liabilities, January 1	183,161	175,939	187,670	203,647	233,642	128,147
Liabilities, December 31	203,168	182,841	175,131	199,282	259,533	145,491
Net farm income	50,825	45,047	17,438	36,388	61,958	43,710
Source of dollars						
Net nonfarm income	\$ 12,624	\$ 10,502	\$ 9,654	\$ 8,682	\$ 10,168	\$ 11,180
Money borrowed	116,122	90,394	91,872	129,694	170,236	72,970
Farm receipts	180,737	156,717	163,138	176,181	232,552	159,413
Total sources	\$309,483	\$257,613	\$264,664	\$314,557	\$412,956	\$243,563
Use of dollars						
Interest paid	\$ 15,070	\$ 13,850	\$ 12,907	\$ 14,966	\$ 19,933	\$ 10,442
Cash operating expenses	112,943	97,737	101,802	111,011	148,804	102,067
Capital farm purchases	27,834	18,299	13,237	13,808	35,316	28,693
Payments on principal	98,101	85,797	104,689	134,024	147,152	58,963
Income and Social Security taxes ..	9,444	8,040	7,926	7,287	9,680	7,665
Net new savings and investment ..	9,710	1,070	-5,739	4,011	34	7,949
Total living expenses	\$ 32,090	\$ 28,499	\$ 26,439	\$ 25,439	\$ 46,430	\$ 22,862
Living — capital purchases	4,291	4,321	3,403	4,011	5,607	4,922
Total uses	\$309,483	\$257,613	\$264,664	\$314,557	\$412,956	\$243,563

^a Records were sorted into thirds according to total noncapital living expenses.

^b Modified-cost basis, except the land value, which was held at the same current value for January 1 and December 31.

including land at current value and machinery at depreciated value. The 53 cents on the dollar was the second lowest since 1985;

- Capital purchases for farm machinery and equipment were at their highest levels since 1979;
- The amount of money borrowed exceeded principal payments by the largest amount since 1981;
- The amount of noncapital living expenses per tillable acre farmed was \$45, which was the highest amount in recent years;
- Income and Social Security taxes paid increased by \$1,404, and the total amount of taxes paid, \$9,444, was the largest amount since 1977.

The 1990 records from three- to five-member families were sorted into high one-third and low one-third groups according to the family's total living expenses (see Table 3). The total cash living expenses for the high-third group averaged \$46,430, compared with \$22,862 for the low-third group. The high-third group farmed 255 more acres than the other group and owned 12 percent of the land farmed; the low-third group owned 18 percent of the land farmed. The results indicate that the low-third group had more nonfarm taxable income. The high-third group had 78 percent more outstanding debt and a higher net farm income. When net farm income is added to net nonfarm income, and total family living expenses—including capital purchases for family living—and payments for income and Social Security tax are subtracted, the low one-third group had \$9,032 more dollars remaining than the high one-third group.

Living expenses included cash expenditures for food, operating expenses, clothing, personal items, recreation, entertainment, education, transportation, life insurance, contributions, and medical expenses. The sample of 408 farms contained 57 more tillable acres than the average of all the recordkeeping farms in the state. Management was also considered slightly above average. In view of these factors, average total living expenses for all recordkeeping families (excluding capital purchases) are estimated to be between \$25,000 and \$27,000 or 15 to 20 percent below the average total living expenses of these 408 central Illinois farms. When the \$12,624 net nonfarm income for 1990 is used for living expenses, the remaining \$23,757 must be generated from the farm business to pay the \$36,381 used for total living expenses including family living capital purchases. The figure, \$23,757, amounts to \$33 per tillable acre farmed.

Income changes on Illinois farms

The average operator's net farm income for all farms in 1990 was \$48,211; it was \$44,652 in 1989 (Table 4). Operator net farm incomes decrease steadily as a higher percent of gross farm returns is used to pay interest. On the average, when more than 25 percent of gross farm returns is used to pay interest, the operator's net farm income is usually negative. With higher incomes in 1990, net farm incomes were not negative until interest as a percent of gross farm returns was 30 to 35 percent. Interest paid as a part of gross farm returns for all operators averaged 8.8

Table 4. Percent of Illinois Farms and Operator Net Farm Income by Interest Paid as a Percent of Gross Farm Returns, 1986 Through 1990

	Interest paid as a percent of gross farm returns							All
	Under 10	10-14.9	15-19.9	20-24.9	25-29.9	30-34.9	35+	
Percent of farms								
1986	54	15	11	7	5	3	5	100
1987	65	14	9	5	3	2	2	100
1988	62	15	9	6	4	1	3	100
1989	65	15	9	5	3	1	2	100
1990	65	16	9	5	3	1	1	100
Net farm income								
1986	31,182	26,241	19,308	13,866	5,783	-3,917	-21,399	23,046
1987	47,596	38,779	35,292	25,667	18,434	11,663	-5,440	41,546
1988	32,526	24,040	14,720	8,712	-799	-6,419	-19,517	24,917
1989	51,632	42,415	31,688	23,894	14,677	61	-2,990	44,652
1990	56,786	41,803	34,008	27,946	19,210	5,407	-13,768	48,211

percent in 1990; 8.9, in 1989; 9.8, in 1988; 9.2, in 1987; and 12.2, in 1986.

Comparative costs and returns between years and among major types of farming operations in northern and central, and in southern Illinois are reported in Tables 5, 7, and 8. The separation of farms into northern and central, and southern Illinois is based on soil-type regions that divide the state approximately on an east-west line from Mattoon to Alton. The sample consisted of grain, hog, beef, and dairy farms having between 340 and 799 acres or an average of 562 acres. Labor available on farms of this size averaged 13 months on grain farms, 23 months on hog farms, 19 months on beef farms, and 27 months on dairy farms. The data in the tables are presented as if the farms were all owner operated. For leased farms, the landlord and tenant shares of the business were combined. Depending on the location, between 55 and 75 percent of the land in Illinois is tenant operated, primarily under crop-share and a small number of livestock-share leases.

Size of farm, type of farm, quality of soil, and managerial inputs have been held reasonably constant by the sampling procedure used in selecting farms within each category. Variations among figures for 1989, 1990, and the 5-year average are due to changes in farm prices and to costs, weather, and internal farming adjustments. The data in Tables 5, 7, and 8 are particularly helpful for comparing types of farming and for evaluating changes in farm costs and returns for a particular size and kind of farm. The data do not reflect overall farming adjustments due to the enlargement of farms or to major changes in the use of resources.

The figure for net farm income comprises returns to the farm family for all unpaid labor, interest on all invested capital, and the managerial inputs used in farming. Changes in the value of farm inventories and that of consumed farm products are included as income. Net farm income is calculated by accounting methods comparable to the accrual method used in

calculating taxable farm income for the federal income tax. Two important differences in the accrual method of income tax accounting should be noted: the provision for capital gains on livestock sales, which was in effect until 1987, and the inclusion of interest paid as a farm expense. The operator's share of net farm income, which is listed below total net farm income in many tables, does have the interest expense deducted from it.

The figures for net farm income are the amount available from the farm business for living costs, income and Social Security taxes, debts, new investments, and savings. Interest must also be paid from total net farm income, but not the operator's share because it has already been subtracted. New capital investments for the farm business have been included with total cash expenditures. Although the cash balance reflects the cash position of the farm business, the figure is influenced by purchases and sales of feed and livestock and by changes in liabilities and borrowed funds.

The investment per farm is established as an average of the investments in farm inventory on January 1 and December 31. Physical quantities of grain and livestock are valued at farm market prices. Machinery, buildings, and soil fertility are valued at the remaining capital cost: original cost less depreciation as allowed for income tax deductions to date. Land is priced at current values, with the same value used for the beginning- and end-of-the-year land inventories. A base land value is established for each farm on the basis of a soil-productivity rating adjusted to a current value each year by using the February index of land prices in Illinois. The procedure used for adjusting the land value is described in the definitions of soil-productivity rating and of the value of land (the current basis) on pages 2 and 3. The annual change in land values represents an adjustment in accounting to bring land values to current market levels. The land adjustment index for 1990 was 3 percent above that of 1989.

Table 5. Averages for Selected Total Farm Items on 340- to 799-Acre Northern and Central Illinois Grain, Hog, and Beef Farms

	Grain farms			Hog farms			Beef farms		
	1990	1989	1986-1990 average	1990	1989	1986-1990 average	1990	1989	1986-1990 average
Number of farms	832	844	813	208	235	226	49	44	53
Total acres	571	566	560	555	552	539	529	522	522
Soil-productivity rating	87	87	87	82	82	82	78	78	79
Cash operating income	\$ 175,291	\$ 154,769	\$ 170,226	\$ 362,584	\$ 306,527	\$ 327,569	\$ 592,017	\$ 544,555	\$ 534,676
Less purchased feed and livestock ..	2,563	2,760	9,432	106,361	99,049	102,566	360,153	370,808	337,975
Net cash operating income	\$ 172,728	\$ 152,009	\$ 160,794	\$ 256,223	\$ 207,478	\$ 225,003	\$ 231,864	\$ 183,747	\$ 196,701
Accounts receivable change	2,961	-4,753	-287	3,063	-2,983	-50	2,849	-5,041	47
Inventory change	2,546	26,647	-1,249	26,128	18,050	6,040	3,035	24,409	9,450
Farm products used ..	259	307	259	652	578	585	845	963	921
Value of farm production	\$ 178,494	\$ 174,210	\$ 159,517	\$ 286,066	\$ 223,123	\$ 231,578	\$ 238,593	\$ 204,078	\$ 207,119
Total cash operating expenses	80,543	74,122	74,005	120,996	103,858	104,639	108,005	94,663	94,960
Prepaid-unpaid change	-820	1,399	-949	-2,333	-305	-1,491	-3,094	4,440	-1,089
Annual depreciation ..	11,112	10,806	13,498	27,068	25,323	28,604	23,682	23,609	27,261
Net farm income	\$ 87,659	\$ 87,883	\$ 72,963	\$ 140,355	\$ 94,247	\$ 99,826	\$ 110,000	\$ 81,366	\$ 85,987
(Operator's share) ^a ...	(35,863)	(38,026)	(27,794)	(78,580)	(42,129)	(47,571)	(49,917)	(29,514)	(35,817)
Unpaid labor charge ..	16,007	14,824	14,817	20,016	18,460	18,177	17,082	16,207	16,063
Returns to capital and management...	71,652	73,059	58,146	120,319	75,787	81,649	92,918	65,159	69,924
Interest charge on capital	61,971	60,066	59,712	74,807	71,944	69,591	81,830	81,053	77,263
Management returns \$	9,681	12,993	-1,566	45,512	3,843	12,058	11,088	-15,894	-7,339
Total cash income ^b ...	177,146	156,166	171,543	363,704	307,887	328,708	592,798	555,704	535,611
Total cash expenditures ^b	98,119	89,725	94,778	264,352	223,372	232,083	493,506	487,445	454,061
Cash balance	\$ 79,027	\$ 66,441	\$ 76,765	\$ 99,352	\$ 84,515	\$ 96,625	\$ 99,292	\$ 68,259	\$ 81,550
Capital purchases	15,259	13,131	11,582	37,133	20,665	25,038	25,378	22,034	21,196
FARM INVESTMENT									
Livestock inventory ...	\$ 161	\$ 185	\$ 208	\$ 114,417	\$ 91,497	\$ 96,335	\$ 240,513	\$ 226,329	\$ 213,155
Grain inventory	108,264	95,129	100,131	100,403	87,954	87,366	99,460	83,257	83,580
Remaining capital cost in:									
Machinery and auto	19,779	16,772	19,942	35,787	31,030	33,687	35,466	29,447	33,236
Buildings and fence	16,196	18,586	19,715	52,254	52,117	57,402	48,352	52,136	52,539
Soil fertility	55	55	63	161	128	123	0	0	1
Value of land (current basis)	\$1,075,561	\$1,029,859	\$968,573	\$ 949,170	\$ 920,803	\$ 836,908	\$ 852,175	\$ 813,744	\$ 772,847
Total farm investment	\$1,220,016	\$1,160,586	\$1,108,632	\$1,252,192	\$1,183,529	\$1,111,821	\$1,275,966	\$1,204,913	\$1,155,358
Rate earned on investment, percent	5.87	6.30	5.24	9.61	6.40	7.34	7.28	5.41	6.05

^a Interest expense deducted from operator's share only.

^b Includes sales or purchases of capital items.

Northern and central Illinois farms

Grain farms. The net farm income for northern and central Illinois grain farms having 340 to 799 acres and no livestock averaged \$87,659 in 1990, with the operator's and landlord's shares combined (Table 5). This income was only \$224 below that of 1989 but \$14,696 above the 5-year average income from 1986 through 1990. This income was the second highest of any during the last decade. The value of farm production increased \$4,284, but cash operating

expenses increased \$6,421. Depreciation expense increased from \$10,806 to \$11,112. This is the first year since at least 1983 that depreciation was higher than in the previous year. The amount of annual depreciation of these farms is now about half of the depreciation these farms had seven years ago.

The main factor causing incomes on northern and central Illinois grain farms to be similar to the year before was that average corn and soybean yields were almost identical in 1989 and 1990. The average

corn yield on these farms in 1990 was 141 bushels per acre, compared to 142 in 1989. The average soybean yield was 47 bushels per acre, compared to 48 the year before. Corn was inventoried 5 cents lower at the end of 1990 compared to the beginning, while soybeans were inventoried 15 cents higher. The value of grain inventories on hand at the end of the year were \$2,571 higher than at the beginning. Accounts receivable, which basically consisted of accrued and earned deficiency payments from the government farm program, were \$2,961 more at the end of the year. Most farmers continue to participate in the government farm program, setting aside 10 percent of their corn acreage base.

The average price received in 1990 for corn and soybeans was lower than the year before but higher than inventory prices at the beginning of the year. This resulted in a positive marketing margin that added to net farm income. Total operating expenses increased 6 percent and depreciation increased 3 percent. Capital purchases of \$15,259 in 1990 were at their highest level since 1983.

Although accrual incomes were similar to the

year before, the net cash incomes increased by \$12,586. Cash grain sales were substantially higher in 1990 compared to 1989. Cash grain sales were lower in 1989 following the drought of 1988. The gross value of farm production was at its highest level since 1985. Management returns of \$9,681 were at their second highest level of the last decade. The rate earned on investment was 5.87 percent, compared with 6.30 percent in 1989 and the last 5-year average of 5.24 percent. This rate earned on investment for grain farms was the second lowest rate earned in 1990 for any type of farm.

A study of the cost to grow corn and soybeans on central Illinois farms is summarized in Table 6. These farms had a soil-productivity index ranging from 86 to 100. The farms used 93 percent of their tillable land to grow corn and soybeans, with 48 percent of the acres in corn and 45 percent in soybeans. The table compares 1990 costs per acre with the 1989 costs. In 1990, the total cost per acre averaged \$349 for corn and \$280 for soybeans. From 1989 to 1990, it increased 3 percent for corn and soybeans.

Nonland costs of \$1.56 per bushel for corn and \$3.47 for soybeans in 1990 are the most relevant costs for continuing production in the short run, especially where land is free of debt. Total costs to produce a bushel of corn were the same in 1990 as in 1989 for these farms, while the total costs to produce a bushel of soybeans increased 39 cents due to lower yields and slightly higher total costs per acre. If the 1990 yields had been 133 for corn and 43 for soybeans or the same as the average for the period from 1987 through 1990, the total cost per bushel would have been \$2.62 for corn and \$6.51 for soybeans. These costs do not include a charge for management.

The cost of fertility for soybeans was allocated on the basis of phosphorus, potassium, and lime removals, with the residual allocated to corn. The total unpaid labor charge was based on the labor available. The nonland interest rate was 10 percent of one-half the average of the beginning- and end-of-year inventory values for the crops on hand, plus one-half the cash-operating expenses (excluding interest paid), plus the depreciated value of machinery and buildings. The adjusted net rent was the average net rent received by crop-share landlords as reported on recordkeeping farms for the period from 1986 through 1990.

Hog farms. The net farm income in 1990 for northern and central Illinois hog farms having 340 to 799 acres averaged \$140,355, with the operator's and landlord's shares combined (Table 5). Net incomes were \$46,108 higher than net incomes in 1989, and \$40,529 higher than the average for the 5-year period from 1986 through 1990. The net farm incomes for this group in 1990 were the highest for any year out of the last 10 years. They were also the

Table 6. Average Cost per Tillable Acre to Grow Corn and Soybeans on Central Illinois Grain Farms with No Livestock

	Corn		Soybeans	
	1990	1989	1990	1989
Number of farms	649	627	649	627
Acres grown per farm...	357	338	335	323
Yield per acre, bu.....	149	145	47	49
Variable nonland costs				
Soil fertility.....	\$ 53	\$ 52	\$ 18	\$ 17
Pesticides.....	22	21	22	21
Seed	23	24	13	14
Drying and storage ...	10	7	4	3
Machinery repairs, fuel, and hire.....	30	27	25	23
Total, variable costs...	\$138	\$131	\$ 82	\$ 78
Other nonland costs				
Labor.....	\$ 30	\$ 28	\$ 27	\$ 25
Buildings and storage	7	7	4	4
Machinery depreciation	19	19	15	15
Nonland interest.....	26	26	23	23
Overhead	12	13	12	13
Total, other costs	\$ 94	\$ 93	\$ 81	\$ 80
Total, nonland costs ..	\$232	\$224	\$163	\$158
Land costs				
Taxes.....	\$ 21	\$ 21	\$ 21	\$ 21
Adjusted net rent	96	94	96	94
Total, land costs	\$117	\$115	\$117	\$115
Total, all costs	\$349	\$339	\$280	\$273
Nonland cost per bu	\$ 1.56	\$ 1.54	\$ 3.47	\$ 3.22
Total, all costs per bu ...	\$ 2.34	\$ 2.34	\$ 5.96	\$ 5.57
<hr/>				
Average yield, past 4 years.....	133	137	43	44
Total, all costs per bu.....	\$ 2.62	\$ 2.47	\$ 6.51	\$ 6.20

highest for any type of farm in 1990. Higher selling prices for hogs were the main reason for the increase in incomes. The value of farm production increased \$62,943, or 28 percent, while cash operating expenses, other than feed costs, increased 17 percent.

Management returns were \$45,512, an increase of \$41,669 from 1989 returns and \$33,454 above the 5-year average from 1986 through 1990. Capital purchases increased by \$16,468, compared with 1989's purchases, and they were \$12,095 above the 1986 through 1990 average. Cash livestock sales increased by \$67,696 in 1990 compared with 1989 figures. The average number of litters farrowed for this group was 230.

Improved earnings caused the rate earned on investment to increase to 9.61 percent in 1990, compared with 6.40 percent in 1989. This was the second highest for any type of farm in Illinois. The 5-year average rate was 7.34 percent. The 5-year average earning rate was the highest of any type of farm in northern and central Illinois.

Beef farms. The net farm income for northern and central Illinois beef farms having 340 to 799 acres averaged \$110,000 in 1990, with the operator's and landlord's shares combined (Table 5). This figure was \$28,634 higher than the 1989 figure and \$24,013 higher than the average from 1986 through 1990.

Higher fat-cattle prices contributed to the improved earnings. The average price received for fat cattle increased 6 percent in 1990 compared with 1989. The average price paid to replace feeder cattle increased 5 percent. Compared with 1989, the value of farm production increased by \$34,515, or 17 percent. It was \$31,474 above the 5-year average for 1986 through 1990. The 1990 value of production was the highest of any in the last 10 years. These farms produced 2,724 hundredweight of beef per farm, or the weight-gain equivalents of 573 head, each gaining 475 pounds.

Management returns of \$11,088 in 1990 for these farms were \$26,982 above 1989 returns and \$18,427 above the 5-year average from 1986 through 1990, which was a *negative* \$7,339. The 1990 management returns were the second highest amount since 1982. The only years that management returns have been positive in the last 8 years were in 1987 and 1990. Capital purchases have increased somewhat during the last three years because of improved earnings—purchases of \$25,378 in 1990 were 20 percent above the 1986 through 1990 average. Cash operating expenses, excluding purchases of feed and livestock, increased 14 percent. The net cash balance for these farms was \$99,292, or \$31,033 more than in 1989 and \$17,742 above the average for 1986 through 1990.

Cost and returns to produce beef from 1987 through 1990, based on a detailed breakdown of individual costs from a selected sample of beef farms, are shown in Table 14. Total returns exceeded total

costs 2 of the last 4 years. This analysis is discussed in detail under the livestock section on feeder-cattle enterprises.

The average rate earned on investment increased from 5.41 percent in 1989 to 7.28 percent in 1990. The 5-year average rate earned on investment from 1986 through 1990 was 6.05 percent. The 1990 rate earned on investment for these farms was the second highest in the last 7 years. The 1986 through 1990 average rate earned on investment is also the lowest for any type of farm. The average total farm investment increased for the second year in a row following a number of years of decreasing investment. The average investment in cattle was the highest of any year during the last eight years.

Farms on which beef cattle are raised or fed continue to compete for resources in Illinois, where nonmarketable resources, such as roughage, labor, and buildings, or very high levels of management are available. Along with other livestock enterprises, feeder-cattle enterprises have benefited from relatively cheap feed prices and improved selling prices. In recent years, this type of farm has survived primarily where there are large amounts of debt-free capital that has been combined with very high levels of management.

Dairy farms. The net farm income for northern and central Illinois dairy farms having 340 to 799 acres averaged \$97,617 in 1990, with the operator's and landlord's shares combined (Table 7). This figure was \$3,506 below the 1989 figure but \$13,738 above the 5-year average from 1986 through 1990. The 1990 income was the second highest of any of the last 8 years. The average number of cows on these farms was 68, four below the average for 1989.

Higher milk prices, which increased the value of farm production, were more than offset by an increase in operating expenses, resulting in a modest drop in net farm income in 1990 compared to 1989. The value of farm production was \$228,463, 9 percent above the average for the 5-year period from 1986 through 1990. Cash operating expenses increased 6 percent in 1990 compared to 1989. A detailed breakdown of the cost of producing milk can be found in Table 16. Management returns of \$14,855 were \$6,262 below 1989 but \$11,643 above the average for the 5-year period from 1986 through 1990. Management returns were positive for the third time out of the last four years after a number of years when they were negative. Capital purchases continued to increase in 1990, averaging \$27,016, \$2,888 above 1989 and at their highest level since 1983.

The 1990 rate earned on investment for these farms was 8.22 percent; the 1989 rate was 9.51 percent. The 5-year average rate earned on investment was 7.25 percent. The 1990 rate earned on investment was the second highest for any type of farm in central and northern Illinois. The average price received for milk in 1990 was 6 percent higher

Table 7. Averages for Selected Total Farm Items on 340- to 799-Acre Northern Illinois Dairy Farms

	1990	1989	1986-1990 average
Number of farms.....	60	49	60
Total acres.....	468	464	474
Soil-productivity rating.....	71	70	71
Cash operating income.....\$	262,824	\$ 257,962	\$ 257,074
Less purchased feed and livestock.....	49,015	51,932	55,758
Net cash operating income.....\$	213,809	\$ 206,030	\$ 201,316
Accounts receivable change.....	1,347	-3,100	259
Inventory change.....	10,996	19,859	6,244
Farm products used.....	2,311	2,786	2,401
Value of farm production.....\$	228,463	\$ 225,575	\$ 210,220
Total cash operating expenses.....	108,518	103,043	101,761
Prepaid-unpaid change.....	-786	-1,329	-613
Annual depreciation.....	23,114	22,738	25,193
Net farm income.....\$	97,617	\$ 101,123	\$ 83,879
(Operator's share) ^a	(59,117)	(66,698)	(47,308)
Unpaid labor charge.....	25,403	22,679	23,278
Returns to capital and management.....	72,214	78,444	60,601
Interest charge on capital ..	57,359	57,327	57,389
Management returns.....\$	14,855	\$ 21,117	\$ 3,212
Total cash income ^b	263,351	258,420	257,469
Total cash expenditures ^b ..	183,204	177,204	177,430
Cash balance.....\$	80,147	\$ 81,216	\$ 80,039
Capital purchases.....	27,016	24,128	21,342
FARM INVESTMENT			
Livestock inventory.....\$	106,712	\$ 108,629	\$ 101,967
Grain inventory.....	69,595	62,579	63,726
Remaining capital cost in:			
Machinery and auto.....	36,556	35,341	35,377
Buildings and fence.....	57,152	56,954	67,025
Soil fertility.....	970	35	213
Value of land (current basis).....	607,563	561,033	567,669
Total farm investment.....\$	878,548	\$ 824,571	\$ 835,977
Rate earned on investment, percent.....	8.22	9.51	7.25

^a Interest expense deducted from operator's share only.
^b Includes sales or purchases of capital items.

than the average price received in 1989 and was historically at an all-time high. However, an increase in production and steady demand caused milk prices to drop sharply during the end of 1990 and the beginning of 1991. Returns to dairy farms are expected to drop sharply in 1991 due to the sharp drop in milk prices. The dairy industry is again faced with the problem of overcapacity and low returns.

The price received for beef from all cull animals and vealers sold from the dairy herd can be an important factor in determining total returns. When beef prices were high, those sales accounted for as much as 20 percent of the total income from the dairy enterprise. But when the beef prices are low, this source of income is only 10 to 12 percent of the total. In 1990, the returns from beef accounted for 17 percent of the total returns to the dairy herd, in comparison with 15 percent in 1989.

Southern Illinois farms

Grain farms. The net farm income for southern Illinois grain farms having 340 to 799 acres averaged \$50,859 in 1990, with the landlord's and operator's shares combined (Table 8). This income is \$16,611 below net farm income in 1989 and \$4,673 below the average from 1986 through 1990. Reduced grain yields resulted in an \$18,734, or 13 percent, drop in the value of production in 1990 compared to 1989. The value of production was the lowest of any in the last four years. Corn yields were 13 bushels per acre lower and soybean yields were 5 bushels per acre lower in 1990 compared to 1989. Farm operating and depreciation expenses were slightly lower than the year before. The cash balance of \$49,355 was the lowest since 1985.

Capital purchases were \$15,055 in 1990, \$657 less than 1989 but \$2,434 above the 5-year average for 1986 through 1990. They were at their second highest level since the early 1980s. Capital purchases in 1990 equaled \$26 per tillable acre compared to \$43 per tillable acre in 1981.

Management returns for these farms of a negative \$5,221 were the lowest since 1986. The 5-year average from 1986 through 1990 for management returns was \$1,238. The rate earned on investment decreased in 1990 to 4.65 percent; in 1989, this rate was 7.11 percent. This was the lowest rate earned on investment for any type of farm in Illinois. The average rate earned on investment for the period from 1986 through 1990 was 5.87 percent and below the average rates for any other types of farms in southern Illinois.

Hog farms. The net farm income for southern Illinois hog farms having 340 to 799 acres averaged \$88,650 in 1990, with the landlord's and operator's shares combined (Table 8). This income was \$6,389 higher than net farm income in 1989 and \$9,225 higher than the average net farm income of \$79,425 earned from 1986 through 1990. Higher hog prices more than offset lower grain yields and were the main factor in the increase in earnings. The value of farm production was up \$6,725, or 3 percent, in 1990 compared to 1989.

Management returns for 1990 were \$22,512, compared to \$14,886 in 1989 and \$14,048 for the 5-year period from 1986 through 1990. Management returns were at their second highest level for any year during the last decade. Capital purchases were \$25,466 in 1990, \$5,328 higher than 1989. While cash operating expense increased \$4,430, or 5 percent, depreciation decreased by \$1,395 and was at its lowest level in recent times.

As with central and northern Illinois hog farms, the rate earned on investment by southern Illinois hog farms increased. In 1990, the rate increased to 9.08 percent from 8.38 percent in 1989. The average rate earned on investment for the period from 1986

Table 8. Averages for Selected Total Farm Items on 340- to 799-Acre Southern Illinois Grain, Hog, and Dairy Farms

	Grain farms			Hog farms			Dairy farms		
	1990	1989	1986-1990 average	1990	1989	1986-1990 average	1990	1989	1986-1990 average
Number of farms.....	254	254	270	82	88	90	39	40	48
Total acres.....	579	580	578	548	551	548	528	502	513
Soil-productivity rating.....	60	60	60	59	59	59	59	60	60
Cash operating income.....	\$138,015	\$148,179	\$142,743	\$276,435	\$262,670	\$265,312	\$322,027	\$325,414	\$283,285
Less purchased feed and livestock ...	9,977	11,128	14,868	87,313	88,261	82,381	67,016	75,062	57,538
Net cash operating income.....	\$128,038	\$137,051	\$127,875	\$189,122	\$174,409	\$182,931	\$255,011	\$250,352	\$225,747
Accounts receivable change.....	52	-38	60	284	95	125	41	204	146
Inventory change.....	-1,408	8,758	2,099	9,489	17,428	5,327	4,700	19,452	9,137
Farm products used ...	1,257	902	867	839	1,077	889	3,400	2,634	2,216
Value of farm production.....	\$127,939	\$146,673	\$130,901	\$199,734	\$193,009	\$189,272	\$263,152	\$272,642	\$237,246
Total cash operating expenses.....	65,986	66,524	62,696	94,308	89,878	87,459	121,188	116,963	104,863
Prepaid-unpaid change.....	-58	420	-768	-1,296	1,403	-906	-690	-736	-1,002
Annual depreciation ...	11,152	12,259	13,441	18,072	19,467	23,294	25,630	26,060	27,869
Net farm income.....	\$ 50,859	\$ 67,470	\$ 55,532	\$ 88,650	\$ 82,261	\$ 79,425	\$117,024	\$130,355	\$105,516
(Operator's share) ^a	(16,979)	(30,242)	(22,934)	(52,582)	(42,607)	(43,120)	(82,210)	(95,772)	(71,818)
Unpaid labor charge ...	16,776	15,780	15,775	18,571	17,450	17,745	24,871	23,875	22,645
Returns to capital and management.....	34,083	51,690	39,757	70,079	64,811	61,680	92,153	106,480	82,871
Interest charge on capital.....	39,304	40,251	38,520	47,567	49,925	47,632	56,612	58,582	52,888
Management returns	\$ -5,221	\$ 11,439	\$ 1,237	\$ 22,512	\$ 14,886	\$ 14,048	\$ 35,541	\$ 47,898	\$ 29,983
Total cash income ^b	139,252	149,362	143,703	277,387	266,654	266,715	322,387	325,802	283,775
Total cash expenditures ^b	89,897	92,644	89,476	206,760	197,570	192,086	223,810	221,185	188,090
Cash balance.....	\$ 49,355	\$ 56,718	\$ 54,227	\$ 70,627	\$ 69,084	\$ 74,629	\$ 98,577	\$104,617	\$ 95,685
Capital purchases.....	15,055	15,712	12,621	25,466	20,138	22,708	37,968	30,921	27,046
FARM INVESTMENT									
Livestock inventory.....	\$ 13,127	\$ 14,675	\$ 13,600	\$ 81,333	\$ 75,044	\$ 76,769	\$129,286	\$137,216	\$112,512
Grain inventory.....	65,622	66,260	61,608	68,425	66,413	63,700	71,518	63,207	63,507
Remaining capital cost in:									
Machinery and auto	22,832	20,229	21,081	26,110	27,956	28,492	50,366	47,358	42,697
Buildings and fence	8,138	9,578	10,540	27,750	35,907	35,104	31,541	31,982	33,913
Soil fertility.....	31	35	69	81	86	38	0	0	3
Value of land (current basis).....	623,279	616,037	570,674	568,479	568,237	526,743	561,949	536,255	509,472
Total farm investment	\$733,029	\$726,814	\$677,572	\$772,178	\$773,643	\$730,846	\$844,660	\$816,018	\$762,104
Rate earned on investment, percent	4.65	7.11	5.87	9.08	8.38	8.44	10.91	13.05	10.87

^a Interest expense deducted from operator's share only.

^b Includes sales or purchases of capital items.

through 1990 was 8.44 percent. The rate earned on investment in this 5-year period for this type of farm was the second highest of any type of participating farm in Illinois. The 1990 rate earned on investment was the third highest of any type of farm.

Dairy farms. The net farm income in 1990 for southern Illinois dairy farms having 340 to 799 acres averaged \$117,024, with the operator's and landlord's shares combined (Table 8). This figure is \$13,331 below the net farm income earned in 1989 but \$11,508 above the average for the period from 1986 through 1990. This net farm income was the

second highest earned by any type of participating farm of this size in Illinois in 1990. Higher milk prices were more than offset by lower grain yields, causing the value of farm production to decrease by \$9,490 in 1990 compared to 1989. However, the 1990 value of farm production was still the second highest for any year in the last decade. Net cash operating income increased by \$4,659 in 1990 compared to 1989, but the value of grain and livestock inventories increased by only \$4,700 compared to a \$19,452 increase the year before. Cash operating expenses increased \$4,225.

Capital purchases of \$37,968 in 1990 were \$7,047 above 1989 capital purchases and were the largest amount for any type of farm in this size range.

Management returns for this type of farm were \$35,541 in 1990; these returns were \$47,898 in 1989. The 5-year average from 1986 through 1990 was \$29,983. The rate earned on investment of 10.91 percent was the highest in the state for this size of participating farm. The average rate earned on investment in 1989 was 13.05 percent, and the 5-year average from 1986 through 1990 was 10.87 percent. The average rate earned on investment by these southern Illinois dairy farms from 1986 through 1990 was the highest of any type of participating farm with 340 to 799 acres in Illinois. In 1990, the average value of bare land on these farms was \$1,171 per tillable acre. On northern Illinois dairy farms, this value was \$1,554 per tillable acre.

The average number of milk cows per farm in 1990 was 93, compared with 97 in 1989, and 87, the past 5-year average. The average of 93 cows in 1990 was 25 more than the average on farms of similar size and type in northern Illinois. In 1990, southern Illinois farms decreased the size of their herds by 4 cows over the 1989 herd size, while northern Illinois farms also decreased theirs by 4.

LIVESTOCK ENTERPRISES

The return per \$100 of feed fed from various livestock enterprises and the price of corn during each of the past 15 years are given in Table 9. Fifteen-year and 5-year averages are also shown. The difference between the average return figure and a feed cost of \$100 represents the margin available for labor, depreciation on equipment, cash expenses other than feed, interest on investment, and profit.

The margin needed to cover nonfeed costs varies with the kind of livestock and depends on the proportion of total production costs represented by feed. The 15-year averages from 1976 through 1990 represent the approximate level of return at which farmers have been willing to maintain livestock production. The average may not represent a break-even return on all farms because some farmers may discount market prices for some of the resources used in producing livestock. If farmers already have facilities for livestock, they only need to cover direct operating costs in order to continue production. However, when they view livestock production as a new or a long-term enterprise, they hope to cover all costs, both fixed and variable. Otherwise they may not undertake the enterprise.

As individual farmers try to increase profits, they tend to curtail livestock production when the return per \$100 of feed fed is below the 15-year average. This tendency on the part of producers causes supplies of livestock products to fluctuate.

Table 9. Returns per \$100 of Feed Fed to Different Classes of Livestock

Year	Farrow-to-finish hogs	Feeder-pig finishing	Feeder-pig production	Feeder cattle bought	Dairy cow herds	Beef cow herds	Native sheep raised	Yearly price of corn
<i>dollars</i>								
1976.....	152	118	176	93	168	91	105	2.55
1977.....	170	134	182	116	181	107	144	2.07
1978.....	208	151	255	170	217	199	159	2.13
1979.....	136	107	194	149	220	183	148	2.44
1980.....	138	122	153	111	207	144	131	2.80
1981.....	138	115	174	107	200	100	84	2.98
1982.....	213	165	237	147	205	115	83	2.43
1983.....	141	118	163	134	178	115	78	3.06
1984.....	155	140	170	141	188	105	102	3.12
1985.....	166	129	170	121	202	101	130	2.54
1986.....	215	178	254	149	210	125	156	2.01
1987.....	217	168	232	196	237	168	141	1.61
1988.....	152	127	158	150	198	150	115	2.32
1989.....	162	141	167	145	209	144	96	2.48
1990.....	206	165	247	162	220	165	98	2.44
Averages								
1976-1990	171	139	195	139	203	134	118	2.47
1976-1980	161	126	192	128	199	145	137	2.40
1981-1985	163	133	183	130	195	107	95	2.83
1986-1990	190	156	212	160	215	150	121	2.17

In farrow-to-finish hog production, returns tend to follow a noticeably cyclical pattern (Table 9). They tend to exceed the 5-year average for one or 2 years and then drop below this average for one or 2 years. Returns per \$100 feed fed of \$206 in 1990 were well above the last 5-year average of \$190.

The returns from feeder cattle vary greatly from year to year. The long-run averages shown in Table 10 indicate that the cattle-feeding business has not been paying average market rates for all resources used by the enterprise. However, the return of \$160 per \$100 feed fed for the most recent 5-year period (1986-90) was well above returns for the two previous 5-year periods and the 15-year average of \$139 (Table 9). Above-average skills are needed in buying, selling, and feeding to meet the competition from other uses for time and money on farms with feeder cattle. Identifying cyclical income movements over a 15-year period in the beef-cattle industry is difficult because this industry is more complex and adjusts more slowly than other livestock enterprises.

The returns above feed costs for dairy enterprises of \$1,471 per cow in 1990 were \$214 above the 5-year average of \$1,257 (Table 10). These returns indicate that the average dairy enterprise has covered the total estimated cost of production of \$1,060 per cow from 1986 through 1990.

For the beef-herd enterprise, the average returns above the cost of feed for the period from 1986 through 1990 provided a margin over cash costs, but fell short of the return needed to cover all nonfeed costs (Table 10). The implication is that the beef enterprise competes most favorably on farms where the resources of labor, capital, and management are plentiful and have few alternate uses. In the beef-cow enterprise, returns above the cost of feed per cow averaged \$179 during the last 5 years. The 1990 returns of \$230 were \$25 above the total costs,

Table 10. Variation in Returns to Livestock Enterprise Units, 1986 Through 1990

	Farrow-to-finish hogs (per cwt)	Feeder-pig finishing (per cwt)	Feeder cattle (per cwt)	Dairy cattle (per cow)	Beef herd (per cow) ^a
Returns above cost of feed and purchased animals					
1986.....	\$26.50	\$16.06	\$17.93	\$1,062	\$ 85
1987.....	25.09	13.28	30.47	1,301	212
1988.....	14.01	6.63	20.56	1,116	196
1989.....	16.71	10.20	18.66	1,334	170
1990.....	27.15	15.79	25.74	1,471	230
Five-year average.....					
	\$21.89	\$12.39	\$22.67	\$1,257	\$179
Nonfeed costs, 1986 through 1990					
Direct cash.....	\$ 6.10 ^b	\$ 4.10 ^c	\$12.60 ^c	\$ 400 ^c	\$ 30 ^c
Other costs.....	11.00 ^b	6.50 ^c	11.80 ^c	660 ^c	175 ^c
Total.....	\$17.10	\$10.60	\$24.40	\$1,060	\$205
Nonfeed cost for future production					
Direct cash.....	\$ 6.50	\$ 4.20 ^d	\$13.00 ^d	\$ 400	\$ 30
Other costs.....	16.00	7.00	15.00	800	200
Total.....	\$22.50	\$11.20	\$28.00	\$1,200	\$230

^a The feed cost for beef herds includes up to \$60 of hay equivalent from salvage roughage.

^b Estimates of annual nonfeed costs are based on enterprise cost studies of operative units from 1986 to 1990.

^c Includes veterinary costs, utilities, fuel, equipment repair costs, and depreciation, from Table 6 in the *Farm Management Manuals* from 1986 to 1990.

^d Includes interest on purchase cost: one-third year for feeder-pig finishing, and one-half year for feeder cattle.

estimated at \$205 per cow. The 1990 returns to the beef-cow enterprise were the highest since returns in the 1978-1979 marketing year.

Raising livestock has become more competitive. Average profit margins are narrow. Fewer farmers are willing to stay in business because returns in some enterprises barely cover direct operating costs. Plans for expansion that require large investments for new facilities should be based on an estimated return that is high enough to cover all costs. Fluctuations in livestock returns can involve a risk in low-return years. The estimated nonfeed cost for future livestock production is also shown in Table 10.

Hog enterprises

The information on farrow-to-finish enterprises in Table 11 is based on a sample of 671 enterprises farrowing 10 litters or more per year. Farms were omitted from the sample if the number of hogs purchased exceeded 10 percent of the pigs weaned. This procedure eliminated from the sample those farms with combined farrowing and feeder-pig operations. (Information on feeder-pig finishing enterprises is given in Table 13.) The average size of farrow-to-finish enterprises on all recordkeeping farms was 204 litters in 1990. The 1990 records summarized here for the "all farms" group show that returns of \$27.15 above feed costs per 100 pounds of pork produced were \$10.44 above the 1989 return of \$16.71.

The 5-year average for returns above feed costs per 100 pounds produced was \$21.89 (Table 10).

Table 11. Hog Enterprises, 1990 Averages per Farm

	Farrow-to-finish enterprises		
	All farms	350 or more litters per farm	Feeder-pig production
Number of farms.....	671	97	15
Pork produced, pound ..	387,191	1,059,840	76,257
Pork produced per litter, pound.....	1,898	1,882	540
Total returns.....	\$203,882	\$563,118	\$66,032
Value of feed fed.....	\$ 98,750	\$257,948	\$26,661
Returns per \$100 of feed fed.....	\$ 206	\$ 218	\$ 247
Number of litters farrowed.....	204	563	141
Pigs farrowed per litter.....	9.60	9.71	9.91
Pigs weaned per litter.....	7.97	8.18	8.33
Litters farrowed per female year.....	1.87	2.00	1.91
Pigs weaned per female year.....	15.11	16.61	15.74
Number of pigs weaned.....	1,626	4,605	1,175
Death loss, percent of pounds produced.....	1.9	2.1	2.9
Weight per hog sold, pound.....	248	243	48 ^a
per 100 pounds produced			
Price received.....	\$ 53.69	\$ 54.27	\$ 96.25 ^a
Total return.....	\$ 52.65	\$ 53.13	\$ 86.59
Feed cost.....	\$ 25.50	\$ 24.34	\$ 34.96
Return above feed.....	\$ 27.15	\$ 28.79	\$ 51.63
Farm grains, pound....	295	290	298
Commercial feed, pound.....	88	89	107
Total concentrates, pound.....	383	379	405
Cost per 100 pounds of commercial feed.....	\$ 14.29	\$ 12.98	\$ 20.23
Cost per 100 pounds of concentrates.....	\$ 6.64	\$ 6.39	\$ 8.56

^a The average weight sold and price received for the feeder-pig production enterprise is for feeder pigs only.

Even the 5-year average can vary significantly because of the wide fluctuations in returns from year to year. Detailed cost records show that an average farmer with existing facilities needed a return above feed costs of \$17.10 per 100 pounds to pay for all nonfeed costs during the past 5 years. The return above all costs during this 5-year period of \$4.79 (\$21.89 minus \$17.10) may still not be large enough to make farmers or lenders feel comfortable about expanding production with borrowed capital.

The farrow-to-finish enterprise records for 1990 reported in Table 11 were also sorted by the number of litters produced. One group farrowing 350 or more litters averaged 563 litters. Compared with the average feed cost for all farrow-to-finish enterprises, the feed cost per 100 pounds of pork produced was \$1.16 lower for the 563-litter group. The large producers paid \$26.20 less per ton for commercial feed, and there was no difference in feed conversion.

Table 12. Average Costs and Returns for Farrow-to-Finish Hog Enterprises by Size of Enterprise, 1988 Through 1990

	Under 250 litters			250 litters or more		
	1990	1989	1988	1990	1989	1988
Number of farms	48	58	80	89	126	124
Tillable acres.....	231	243	269	607	513	550
Number of litters	138	145	142	475	458	439
per 100 pounds of pork produced						
Total returns.....	\$ 53.55	\$ 43.13	\$ 40.29	\$ 53.81	\$ 44.43	\$ 41.48
Cash costs						
Feed.....	\$ 28.30	\$ 28.62	\$ 27.88	\$ 25.46	\$ 26.36	\$ 25.95
Operating expenses:						
Maintenance and power ^a	4.16	3.20	3.68	4.24	3.58	3.45
Livestock expenses.....	2.22	1.66	1.93	2.16	1.86	1.71
Insurance, taxes, and overhead97	.97	.91	1.02	1.01	1.07
Total operating expenses.....	\$ 7.35	\$ 5.83	\$ 6.52	\$ 7.42	\$ 6.45	\$ 6.23
Total cash costs	\$ 35.65	\$ 34.45	\$ 34.40	\$ 32.88	\$ 32.81	\$ 32.18
Other costs						
Depreciation ^b	\$ 2.52	\$ 2.16	\$ 2.84	\$ 2.68	\$ 2.58	\$ 3.28
Labor	4.37	3.74	3.66	3.70	3.62	3.61
Interest charge on all capital	3.64	3.49	3.83	3.55	3.61	3.44
Total other costs.....	\$ 10.53	\$ 9.39	\$ 10.33	\$ 9.93	\$ 9.81	\$ 10.33
Total nonfeed costs.....	\$ 17.88	\$ 15.22	\$ 16.85	\$ 17.35	\$ 16.26	\$ 16.56
Total all costs.....	\$ 46.18	\$ 43.84	\$ 44.73	\$ 42.81	\$ 42.62	\$ 42.51
Return above all costs.....	\$ 7.37	\$ -7.1	\$ -4.44	\$ 11.00	\$ 1.81	\$ -1.03

^a Includes utilities, machinery, equipment and building repairs, machine hire, and fuel.

^b Includes machinery, equipment, and building depreciation.

The prices received for hogs sold by large producers or the net at the farm was 58 cents higher than the net received by all producers.

A summary of the feeder-pig production enterprises is also reported in Table 11. In 1990, the average enterprise in this group produced 141 litters with a return of \$247 per \$100 of feed fed. On an average, 8.33 pigs per litter were weaned and sold at 48 pounds per head. The 1990 average price received per 100 pounds of feeder pigs sold was \$96.25 or \$46.20 per head. The average feed cost per 100 pounds of pork produced (pigs and breeding stock) was \$34.96 for 405 pounds of concentrate.

A substantial profit margin is required to compensate for the risk and detailed management involved in hog production in comparison with the risk and management involved in other uses of the same resources. Large-scale hog production in modern confinement facilities requires high capital investments. The future recovery of this specialized capital investment is uncertain, and the salvage value of confinement hog facilities is low. In addition, acquiring the managerial skills necessary for the large-scale production of hogs in confinement may discourage any rapid expansion of large hog-producing units. Pork production appears to have stabilized at more moderate levels than in the past. With some increase in consumer demand and improvement in production efficiency, returns to hog production have gained significantly since 1979.

The data on hog enterprises in Table 12 show a detailed breakdown of costs and returns from a group of specialized commercial hog farms for 1988, 1989,

and 1990. The value of the feed fed to hogs was more than 75 percent of the crop returns produced on these farms. This intensity of livestock feeding indicates a commitment of major resources to the hog enterprise. The producers in this group probably exercise a higher level of management and use more confinement production facilities than the average hog producer in Illinois.

The hog enterprise records summarized in Table 12 were sorted by the number of litters produced. The group farrowing fewer than 250 litters averaged 142 litters from 1988 to 1990; the group farrowing 250 or more litters averaged 457 litters during the same period.

The cost data reported in Table 12 have been divided into two categories: cash costs and other costs. This classification of production costs is important when short-term management decisions are being made concerning the volume of production, particularly during periods of low prices.

As reported in Table 12, cash costs of production in 1990 ranged from \$32.88 to \$35.65 per 100 pounds of pork produced, depending on the grouping size. Feed is included as a cash cost although for most producers a major share of the grain is raised on the farm. The readily available alternative cash market for grain makes the raised feed the same as cash.

The other category of costs includes depreciation, labor, and an interest charge on all capital. Part of the labor and interest charge is a cash cost on most farms. The proportion of labor that is hired depends largely on the size of the farm. A one-person farm

Table 13. Feeder-Cattle and Feeder-Pig Finishing Enterprises, 1990 Averages per Farm

	Feeder cattle	Feeder-pig finishing
Number of farms	204	154
Total pounds produced	155,315	157,299
Total returns	\$103,701	\$ 62,702
Value of feed fed	\$ 63,718	\$ 37,865
Returns per \$100 of feed fed	\$ 162	\$ 165
Death loss, percent of pounds produced	1.9	2.2
Average weight purchased	646	51
Price paid per 100 pounds	\$ 85.42	\$ 105.19
Price received per 100 pounds	\$ 76.40	\$ 54.51
Average weight sold	1,109	240
per 100 pounds produced		
Total returns	\$ 66.77	\$ 39.86
Feed cost	\$ 41.03	\$ 24.07
Return above feed	\$ 25.74	\$ 15.79
Farm grains, pound	598	291
Commercial feeds, pound	38	84
Total concentrates, pound	636	375
Hay, pound	68	... ^a
Corn silage, pound	454	... ^a
Other silage, pound	140	... ^a
Hay equivalent, pound	282	... ^a

^a Data not available.

does not hire much labor, whereas a major share of the labor will be hired on a four-person farm.

Most categories of nonfeed costs increased for both groups of enterprises in 1990. Total nonfeed costs increased \$2.66 per 100 pounds of pork produced (17 percent) for the small enterprises and \$1.09 (7 percent) for the large enterprises from 1989 to 1990. For the small group, both total operating expenses and total other costs increased substantially while the increase for the large group was primarily in the operating expense category. With slightly lower feed costs, the total cost of production increased from 1989 to 1990 by \$2.34 per 100 pounds of pork produced for the group of small enterprises as compared to an increase of only 19 cents for the large enterprise group.

The most significant cost difference between the two groups of farms was the feed cost. The average feed cost for 1988, 1989, and 1990 per 100 pounds of pork produced for the large enterprises was \$2.35 lower than it was for the small enterprises. This difference in feed cost was an average of about \$21,000 per farm with the larger enterprises. Differences in the amount of feed used per 100 pounds of pork produced and the price paid for commercial feeds caused this difference in feed costs.

From 1988 through 1990, the returns above all costs averaged 74 cents per 100 pounds of pork produced for the small enterprises and \$3.93 for the large enterprises—a difference of \$3.19. Management practices, such as the choice of building systems, method of transporting hogs to market, type of market used, and on- versus off-farm systems for feed-

processing affect the individual cost items reported in Table 12. But the return above all costs should accurately reflect the relative efficiency of the two groups of hog enterprises.

Feeder-cattle and feeder-pig finishing enterprises

Data for 1990 on the feeder-cattle and feeder-pig finishing enterprises are presented in Tables 13 and 14. These enterprise summaries include weights and values on partly finished animals purchased in previous years and on animals purchased during the current year.

The average amount of pork produced per farm from feeder-pig enterprises was 157,299 pounds in 1990 (Table 13). At 175 pounds of gain per head, this figure amounted to 899 head fed per farm in 1990, up from the 870 head fed per farm in 1989.

The return above the cost of feed and purchased animals from 1986 through 1990 averaged \$12.39 per 100 pounds of gain. This return was \$1.79 above the \$10.60 of all nonfeed costs for the past 5 years. It is also above the estimated \$11.20 required to cover all costs for future production (Table 10).

Given that a 475-pound unit of gain equals one head of feeder cattle, the average of 155,315 pounds of beef produced per farm in 1990 (Table 13) equals 327 head of feeder cattle per farm. That figure is an increase of 4 from the average of 323 head fed per farm in 1989. The return per \$100 of feed for feeder-cattle enterprises was \$162 in 1990 in comparison with a 5-year average of \$160 and a 15-year average of \$139 (Table 9).

The price paid for feeders was \$4.32 per 100 pounds higher in 1990 than it was in 1989; the price received for cattle sold in 1990 was \$4.03 higher per 100 pounds than the price received in 1989. The average weight of purchased animals was 646 pounds; the average weight of animals sold was 1,109 pounds. Feed cost was \$41.03 per 100 pounds produced in 1990; it was \$40.92 in 1989.

Each 100 pounds of beef produced required 636 pounds of concentrates and 68 pounds of hay. The amount of corn silage used in 1990 averaged 454 pounds; other silage averaged 140 pounds, making a total of 594 pounds. Silage utilization by the feeder-cattle enterprise has decreased the last 5 years since the 10-year average for the period from 1976 through 1985 reached 933 pounds per 100 pounds of beef produced. The use of 594 pounds per 100 pounds of beef produced in 1990 was the smallest amount fed since 1963. The high initial investment required for many silage feeding operations and a slowdown in capital purchases may denote more reliance on higher concentrate and dry roughage facilities.

These data do not show the wide variation in profits among cattle-feeding programs. The data in Tables 9, 10, and 13 on Illinois feeder-cattle enter-

Table 14. Average Costs and Returns for Beef-Feeding Enterprises, 1987 Through 1990

	1990	1989	1988	1987	1987-1990 average
Number of farms.....	36	40	41	33	38
Tillable acres.....	610	583	527	500	555
Hundredweight beef produced.....	3,585	3,446	2,845	3,320	3,299
Number head @ 475-pound gain equivalents.....	755	725	599	699	695
Average weight purchased, pound.....	654	658	655	642	652
Average weight sold, pound.....	1,133	1,140	1,127	1,105	1,126
Price received per 100 pounds sold.....	\$ 76.77	\$ 72.32	\$ 68.76	\$ 63.92	\$ 70.44
Price paid per 100 pounds purchased.....	\$ 86.65	\$ 83.35	\$ 81.04	\$ 72.64	\$ 80.92
per 100 pounds of beef produced					
Cash costs					
Feed ^a	\$ 40.09	\$ 39.67	\$ 40.46	\$ 32.37	\$ 38.15
Operating expenses:					
Maintenance and power ^b	3.71	3.44	3.67	4.20	3.76
Livestock expense.....	2.25	2.60	2.80	2.36	2.50
Insurance, taxes, and overhead.....	1.18	1.32	1.12	1.49	1.28
Interest on cattle ^c	8.47	9.06	7.69	7.39	8.15
Total operating expense.....	\$ 15.61	\$ 16.42	\$ 15.28	\$ 15.44	\$ 15.69
Total cash costs.....	\$ 55.70	\$ 56.09	\$ 55.74	\$ 47.81	\$ 53.84
Other costs					
Depreciation ^d	\$ 4.05	\$ 4.07	\$ 3.68	\$ 4.74	\$ 4.14
Labor.....	2.20	2.31	1.95	2.57	2.26
Interest on other capital.....	2.65	2.54	1.53	2.03	2.19
Total other costs.....	\$ 8.90	\$ 8.92	\$ 7.16	\$ 9.34	\$ 8.59
Total all costs.....	\$ 64.60	\$ 65.01	\$ 62.90	\$ 57.15	\$ 62.43
Total returns ^e	\$ 67.23	\$ 58.60	\$ 58.78	\$ 59.14	\$ 60.94
Return above all costs.....	\$ 2.63	\$ -6.41	\$ -4.12	\$ 1.99	\$ -1.49

^a All grain fed was priced at the average market price for the year. Market values were used for roughage fed while protein and minerals were charged at cost. All the feed fed is assumed to have been marketable.

^b Includes utilities, machinery, equipment and building repairs, machine hire, and fuel.

^c Interest is a charge on the average value of beginning- and end-of-year inventories on hand. The rate was 10 percent for 1987 and 1988, 11 percent for 1989, and 10 percent for 1990.

^d Includes machinery, equipment, and building depreciation.

^e Sales less cost of purchased animals, plus or minus inventory value change. No credit has been calculated for reduced fertility cost when manure is applied to crops.

prises reflect the composite results of all qualities and ages of cattle fed. The data are heavily weighted, with good-to-choice calves and yearlings as the predominant cattle-feeding system. Most farmers now feed more than one drove of cattle each year to better utilize their fixed investments in mechanized feedlots.

The return above the cost of feed and purchased animals averaged \$22.67 per 100 pounds of beef produced from 1986 through 1990 (Table 10). During this period, returns ranged from \$17.93 in 1986, to \$30.47 in 1987. The returns above feed costs have remained below the estimated costs required to pay for all nonfeed costs for the average cattle feeder in 3 of the last 5 years. The 1987 returns above feed cost of \$30.47 were record high, at least for the period since 1964.

The data in Table 14 on feeder-cattle enterprises show a detailed breakdown for the period from 1987 through 1990 on cost and returns to produce beef on beef-feeding farms. The farms included had no other livestock. All costs were accounted for either in crops or in the beef-feeding enterprise. The figure for feed costs is based on the assumption that all the grain and roughage fed was produced on the farm and was marketable.

The data show that these farms were finishing an average of 695 feeders each year from 1987

through 1990. The 4-year average total cash cost including feed and interest charged on cattle was \$53.84 per 100 pounds of beef produced. The average total return of \$60.94 for the same period exceeded total cash costs by \$7.10 per 100 pounds produced, or about \$34 per feeder.

Some feeders may be able to discount some of these cash costs for roughage fed and for interest on cattle if they had no market for the roughage or were able to use their own money invested in cattle without paying interest. Other costs of \$8.59 per 100 pounds of beef produced or \$41 per feeder (\$8.59 multiplied by 4.75 hundredweight of gain per feeder) include depreciation, labor, and interest. Adding the other costs to cash costs results in total costs of \$62.43 per hundredweight over the 4-year period.

A number of cattle feeders in Illinois apparently will feed cattle if their return covers feed and cash costs but is short of paying market rates for some nonmarketable roughage, and fixed and overhead costs. But this number is expected to decline.

Farmer's values, goals, and attitudes have been important in maintaining production; but the dictates of the market, technological changes, and shifts in the basic factors of supply and demand continue to cause changes. The return reflected in these averages for the feeder-cattle enterprise suggests that to be

profitable, farmers must produce the kind of beef the consumer wants at the lowest possible cost. Even though farms may have nonmarketable feeds, unemployed labor, or fixed capital investments in facilities, these data indicate returns are not consistently high enough to justify the building of new facilities.

Dairy enterprises

The minimum size for a herd included in this analysis was 10 milk cows. The average herd size on recordkeeping farms increased steadily at an average of 1.8 cows per year from 42 in 1970 to 63 in 1982. The herd size has remained steady, between 63 and 69 cows, since 1982.

The return per \$100 of feed fed to dairy cattle in 1990 was \$220. The average for the period from

1986 through 1990 was \$215 (Table 9). In 1990, milk prices per hundredweight increased 17 percent from 1988 levels. This increase is in contrast to an average annual decrease of 1.2 percent from 1984 to 1988. From 1989 to 1990, beef prices for all weights sold increased \$4.34 per hundred pounds, while feed costs decreased \$1.13 per unit of milk or beef produced.

Dairy farmers have reduced the amount of pasture and dry hay and have increased the amounts of grain and silage fed over the past two decades. Pasture days per animal unit dropped from 145 in 1960, to 50 in 1970, to 12 in 1990. This shift indicates that significant pasture days are a thing of the past on nearly all dairy farms in this sample.

The dairy herds in Table 15 were subdivided into two groups according to their efficiency as measured by returns above the cost of feed per cow. In comparison with the low-efficiency group, the high-efficiency group had more cows in the herd, and 74 percent higher returns above feed per cow. Returns above feed per cow for the high-efficiency group were \$1,833 and \$1,054 for the low-efficiency group. For the high-efficiency group, two factors were most significant: 28 percent higher milk production per cow—an average of 18,690 pounds, compared with an average of 14,540 pounds for the low-efficiency group—and a 22 percent lower feed cost per unit of milk and beef produced.

The average return above feed costs per cow for all dairy herds was \$1,471 in 1990 (Table 15). This figure compares with the 5-year average of \$1,257 per cow (Table 10). The 5-year average return above feed cost required to pay market prices for all nonfeed costs is estimated to be about \$1,060 per cow. The estimated return above feed costs currently required to attract new investments for dairy herds is about \$1,200 per cow. Although the number of dairy herds has decreased, their size and efficiency have increased, and they have continued to increase the milk supply. Normal depreciation and wear-and-tear will soon require the reinvestment of greater amounts of capital in some of these businesses.

The data in Table 16 on dairy enterprises show a detailed breakdown of milk production costs and returns for dairy farms by the number of cows in the herd in the period from 1988 through 1990. The farms included had no other livestock. All costs were accounted for either in crops or in the dairy enterprise. The total costs for the dairy enterprise were reduced by the amount of income derived from an inventory increase in the pounds of beef produced or from sales, which was valued at the average price received for all weights of dairy animals sold from 1986 through 1990. The residual costs, amounting

Table 15. Dairy Cattle Enterprises, 1990 Averages per Farm

	All farms	Efficiency	
		High ^a	Low ^b
Number of farms	189	61	61
Number of cows	69.7	76.0	57.4
Milk cows dry, percent.....	13.4	12.5	14.9
Animal units in herd	135	155	108
Total returns.....	\$187,970	\$236,344	\$128,757
Value of feed fed.....	\$ 85,422	\$ 97,027	\$ 68,208
Returns per \$100 of feed fed	\$ 220	\$ 243	\$ 188
Returns above feed per cow.....	\$ 1,471	\$ 1,833	\$ 1,054
Total milk produced, 100 pounds	11,673	14,205	8,346
Pounds of milk per cow.....	16,747	18,690	14,540
Pounds of butterfat per cow.....	614	689	533
Total beef produced, pound.....	50,661	70,643	33,035
Pounds of beef per cow.....	726	929	575
Death loss, percent of pounds produced.....	8.2	4.6	12.8
Price received for:			
100 pounds of milk.....	\$ 13.80	\$ 13.86	\$ 13.65
100 pounds of beef.....	\$ 62.82	\$ 64.32	\$ 61.63
Per unit of milk and beef: ^c			
Feed cost.....	\$ 51.03	\$ 45.61	\$ 58.55
Grain, pound	307	279	319
Protein and minerals, pound.....	116	114	110
Total concentrates, pound	424	394	429
Hay and dry roughage, pound	267	202	384
Corn silage, pound	401	290	504
Other silage, pound	437	443	436
Pasture days	1	1	1
Pasture days per animal unit.....	12	12	15
Hay equivalent per cow, tons	7.4	7.2	7.9
Concentrates per cow, pound.....	10,179	11,024	8,704

^a High one-third return above feed per cow exceeds 1,430.

^b Low one-third return above feed per cow is below 1,186.

^c 1,000 pounds of milk or 100 pounds of beef.

Table 16. Average Milk Production Costs and Returns by Size of Herd, 1988 Through 1990

	40 to 79 cows in herd			80 or more cows in herd		
	1990	1989	1988	1990	1989	1988
Number of farms.....	102	101	107	57	53	50
Tillable acres.....	295	269	279	468	474	480
Number of cows.....	57.3	59.5	108.4	108.4	110.7	108.9
Milk per cow, pound.....	16,625	16,488	16,279	17,012	16,512	16,295
per 100 pounds of milk produced						
Price received.....	\$ 13.87	\$ 13.09	\$ 11.86	\$ 14.03	\$ 13.11	\$ 12.04
Cash costs						
Feed.....	\$ 6.38	\$ 6.28	\$ 6.01	\$ 6.14	\$ 6.10	\$ 6.12
Operating expenses:						
Maintenance and power ^a	1.42	1.36	1.20	1.51	1.30	1.23
Livestock expense.....	1.11	1.04	1.00	1.11	.95	1.04
Insurance, taxes, and overhead.....	.28	.26	.28	.23	.22	.23
Total operating expenses.....	\$ 2.81	\$ 2.66	\$ 2.48	\$ 2.85	\$ 2.47	\$ 2.50
Total cash costs.....	\$ 9.19	\$ 8.94	\$ 8.49	\$ 8.99	\$ 8.57	\$ 8.62
Other costs						
Depreciation ^b	\$.82	\$.77	\$.81	\$.76	\$.76	\$.75
Labor.....	1.81	1.77	1.76	1.50	1.49	1.45
Interest charge on all capital.....	1.56	1.52	1.36	1.49	1.49	1.39
Total other costs.....	\$ 4.19	\$ 4.06	\$ 3.93	\$ 3.75	\$ 3.74	\$ 3.59
Total nonfeed costs.....	\$ 7.00	\$ 6.72	\$ 6.41	\$ 6.60	\$ 6.21	\$ 6.09
Total all costs.....	\$ 13.38	\$ 13.00	\$ 12.42	\$ 12.74	\$ 12.31	\$ 12.21
Return above all costs.....	\$.49	\$.09	\$ -.56	\$ 1.29	\$.80	\$ -.17

^a Includes utilities, machinery, equipment and building repairs, machine hire, and fuel.
^b Includes machinery, equipment, and building depreciation.

to 87 percent of the total enterprise costs, were then considered as the net cost of producing milk.

The differences between the herds containing 40 to 79 cows and those containing 80 or more cows for the period from 1988 through 1990 appear to be narrowing. This is probably due to the smaller, lower-efficiency herds exiting the dairy enterprise. For the 3-year period, the milk price for the larger herds averaged only 12 cents higher, while total nonfeed costs per 100 pounds of milk sold were 51 cents lower. The major cost difference was 30 cents less for labor on the large farms.

In 1990, feed costs per 100 pounds of milk produced increased slightly for both groups. The cost of feed averaged about 48 percent of total production costs in Illinois dairy enterprises. Total nonfeed costs increased by 4.1 and 6.3 percent, respectively, for the small and large dairy herds when compared with costs in 1989. The total cost of producing 100 pounds of milk in 1990 was \$13.38 for the small herds and \$12.74 for the large herds. The average price received for milk in 1990 increased for both groups of dairy enterprises. This resulted in returns above total production costs of 49 cents and \$1.29, respectively, for both the small and large enterprise groups in 1990. The returns above all costs for the large-herd group have averaged 63 cents per 100 pounds of milk produced more than the returns for the small-herd group from 1988 through 1990. This amounts to \$11,435 more in returns per farm per year for

herds in the large size group. In general, dairy farmers enjoyed one of their most profitable years in 1990.

Beef-cow herds

The minimum size for a beef-cow herd included in Table 17 was 10 cows. Farms combining cow herds and purchased feeder cattle were not included. In addition to all farms, Table 17 gives an analysis of cow herds in which calves were sold at weaning time and compares them with cow herds in which calves were finished to slaughter weights. From 1956 through 1969, the average size of the herd on all farms ranged from 25 to 30 cows. From 1969 to 1973, the average grew to about 40 cows per herd and remained stable through 1989. The herd size increased to 45 cows in 1990. Most Illinois farmers who maintain a beef-cow herd do so as a supplemental enterprise to market nonsalable feeds and labor.

The return per \$100 of feed fed to beef-cow herds averaged \$165 in 1990. The return for the 5-year period from 1986 through 1990 averaged \$150, which is above the 15-year average of \$134 for the period from 1976 through 1990 (Table 9). Beef prices received in 1990 averaged \$76.03 per hundred-weight, an increase of \$3.92 over beef prices in 1989. Feed costs per 100 pounds of beef produced decreased by \$2.35 to \$47.58 in 1990.

Since 1986, the return above feed cost per cow for the average farmer to feed out calves rather than to sell them at weaning has been about \$52 per cow.

Table 17. Beef-Cow Enterprises, 1990 Averages per Farm

	All farms	Calves sold	Calves fed out
Number of farms	309	159	118
Number of cows in herd ...	45	42	50
Animal units in herd.....	69	59	85
Total pounds produced.....	33,557	24,953	46,971
Beef per cow in herd, pound	745	594	939
Total returns	\$26,362	\$20,132	\$35,953
Value of feed fed	\$15,968	\$11,581	\$22,517
Returns per \$100 of feed fed.....	\$ 165	\$ 173	\$ 159
Returns above feed per cow	\$ 230	\$ 203	\$ 268
Death loss, pound	1,561	1,259	2,014
Percent of pounds produced	4.60	5.00	4.20
Price received per 100 pounds sold	\$ 76.03	\$ 78.13	\$ 73.56
per 100 pounds produced			
Feed cost.....	\$ 47.58	\$ 46.41	\$ 47.93
Grain, pound.....	243	120	339
Protein and minerals, pound	33	20	40
Total concentrates, pound	276	140	379
Hay and dry roughage, pound	631	777	515
Corn silage, pound.....	381	272	447
Other silage, pound	71	48	76
Pasture days	30	37	26
Pasture days per animal unit	149	157	144
Hay equivalent per cow, tons.....	5.6	5.2	6.2

Additional returns are needed for the added costs of labor, buildings, and the capital required to feed out the calves. In 1990, return above feed cost for feeding calves to market weight was \$65 more per cow than for selling calves.

Costs, returns, financial summaries, investments, land use, and crop yields for different sizes and types of Illinois farms are reported in Tables 19 to 27a.

Table 18. Sheep Enterprises, 1990 Averages per Farm

	Native flocks
Number of farms.....	39
Wool and mutton produced, pound	6,674
Total returns	\$3,110
Value of feed fed	\$3,152
Returns per \$100 of feed fed	\$ 98
Percent lamb crop	143
Death loss, pound	587
Percent of pounds produced.....	8.8
per 100 pounds produced	
Price received	\$58.62
Feed cost	\$47.23
Concentrates, pound	361
Hay, pound	539
Corn silage, pound.....	0
Pasture days	11
Hay equivalent, pound.....	808

Sheep enterprises

Sheep production is a minor enterprise on Illinois recordkeeping farms. The minimum size of enterprise in Table 18 is 3 animal units. One animal unit of sheep is defined as 750 pounds, liveweight. The return per \$100 of feed fed in 1990 was \$98 for native flocks. The pounds of wool and mutton produced per farm have remained fairly constant for the past 10 years. The price received for sheep declined from \$59.61 per hundredweight in 1989 to \$58.62 in 1990, while feed costs per hundredweight produced decreased by \$5.50 to \$47.23. Most Illinois farmers who keep sheep do so as a supplemental enterprise in order to market nonsalable feeds and labor.

Table 19. 1990 Average Return, Costs, and Financial Summary by Size and Management Returns for Northern and Central Illinois Grain Farms with Soil Ratings from 86 to 100

Range in size (total acres) Management returns Number of farms	180-339 79	340-799 525	800-1199 225	Over 1199 107	Your Farm	All Farms 936	Low 25% 131	340-799 High 25% 131
Total acres in farm	271	561	969	1,546		747	515	614
Acres of tillable land	256	542	930	1,501		721	492	598
Soil rating on tillable land	94	92	92	91		92	93	92
Total months labor	11.7	13.2	17.2	26.5		15.6	13.7	13.3
Months of hired labor	0.5	1.4	4.4	10.1		3.0	1.9	1.4
Beef produced, hundredweight	0	1	3	5		2	1	1
Pork produced, hundredweight	0	0	1	2		1	1	0
Dairy cows, number	0	0	0	0		0	0	0
Dollar returns per farm								
Crop returns	82,142	178,210	306,419	504,134		238,180	151,548	209,842
Livestock returns above feed	(20)	47	189	174		90	28	25
Custom work	1,074	1,907	3,145	6,400		2,648	1,268	2,530
Other farm receipts	1,064	1,164	2,051	4,044		1,698	1,176	1,189
Value of farm production	84,259	181,328	311,805	514,753		242,616	154,021	213,586
Dollar costs per farm								
Crop expenses	18,661	39,769	67,806	107,716		52,494	39,913	39,763
Power and equipment	14,250	27,401	45,841	72,065		35,829	29,827	26,923
Building and fence	4,854	7,504	10,782	17,154		9,171	9,320	6,988
Labor	15,606	17,624	23,751	38,031		21,259	18,280	17,711
Livestock services and supplies	88	141	181	541		192	146	31
Taxes	5,836	11,354	19,455	30,225		14,993	10,593	12,515
Insurance and miscellaneous	2,913	5,098	7,728	12,694		6,414	5,351	4,990
Interest on nonland capital	7,133	13,739	24,225	40,117		18,717	14,714	14,095
Land charge or net rent	25,285	51,063	87,484	140,412		67,856	46,903	55,651
Total nonfeed cost	94,624	173,691	287,249	458,951		226,925	175,044	178,665
Capital account adjustment	73	1,390	1,417	888		1,228	716	2,762
Management returns	(10,291)	9,026	25,972	56,690		16,918	(20,308)	37,683
Farm production per \$1.00 of nonfeed costs	0.89	1.04	1.09	1.12		1.07	0.88	1.20
Farm production per man	86,691	164,828	217,382	232,686		187,092	134,632	192,699
Financial summary								
Cash operating income	88,237	177,092	298,751	495,423		235,228	159,705	198,410
Inventory change	(4,365)	3,365	12,289	23,031		7,106	(4,928)	12,946
Accts. receivable (net change)	1,221	2,763	4,788	7,440		3,655	1,571	3,873
Farm products used	93	260	433	745		343	218	349
Less purchased feed	923	2,054	4,181	11,403		3,539	2,431	1,892
Less purchased livestock	2	98	274	483		176	113	99
Adjusted gross farm income	84,259	181,328	311,805	514,753		242,616	154,021	213,586
Cash operating expense	42,096	81,091	137,744	222,255		107,556	83,115	82,003
Prepaid expense (-if increased)	(825)	(761)	(2,203)	(2,371)		(1,297)	(175)	(1,242)
Accts. payable (+if increased)	94	104	448	1,202		311	(127)	234
Farm-produced inputs	91	244	401	726		324	174	345
Total operating expense	41,455	80,676	136,388	221,820		106,893	82,985	81,339
Income before depreciation	42,803	100,647	175,414	292,932		135,719	71,037	132,249
Less depreciation	5,628	12,270	21,891	34,379		16,549	14,528	11,560
Capital account adjustment	73	1,390	1,417	888		1,228	716	2,762
Net farm income *	37,249	89,768	154,941	259,442		120,399	57,226	123,451
(operator's share) *	17,981	36,311	59,331	99,819		47,557	19,276	54,374
Labor & mgt. income per operator	4,472	24,591	40,424	60,386		30,791	(4,580)	53,179
Rate earned on investment, %	3.47	5.76	6.24	6.67		6.05	3.47	7.70

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 86 to 100 are those with nearly level, well-drained prairie soils.
* Interest expense deducted from operator's share only.

Table 19a. 1990 Average Operating Costs, Investments, and Land Use by Size and Management Returns for Northern and Central Illinois Grain Farms with Soil Ratings from 86 to 100

Range in size (total acres)	180-339	340-799	800-1199	Over 1199	Your Farm	All Farms	Low 25% 131	340-799 High 25% 131
Management returns Number of farms	79	525	225	107		936		
Some costs and returns per tillable acre								
Soil fertility	34.31	34.70	34.41	33.73		34.37	38.51	32.16
Pesticides	21.33	21.14	21.49	21.34		21.30	23.29	18.57
Seed and other crop	17.12	17.56	17.02	16.69		17.17	19.34	15.81
Crop total	72.76	73.40	72.92	71.75		72.84	81.15	66.54
Light vehicle and utilities	6.06	3.97	3.20	2.78		3.51	4.70	3.74
Machinery repairs, supplies	15.76	14.36	13.29	12.70		13.67	16.95	12.44
Machinery hire	7.93	4.72	4.28	4.73		4.68	6.78	3.68
Fuel and oil	10.84	9.67	9.70	9.54		9.68	10.37	9.43
Machinery depreciation	14.97	17.86	18.84	18.25		18.17	21.85	15.77
Power and equipment total	55.56	50.58	49.30	48.01		49.72	60.64	45.05
Drying and storage	9.53	7.45	5.77	5.58		6.54	8.29	7.06
Building repair	2.43	1.62	1.13	1.35		1.43	2.97	1.06
Building depreciation	6.97	4.79	4.70	4.50		4.76	7.69	3.57
Building total	18.93	13.85	11.59	11.43		12.73	18.95	11.69
Labor, unpaid	58.97	29.42	18.56	14.80		23.46	32.36	26.81
Labor, hired	1.88	3.10	6.98	10.53		6.04	4.80	2.83
Labor total	60.85	32.53	25.54	25.33		29.50	37.16	29.64
Value of feed fed	0.09	0.07	0.15	0.14		0.11	0.07	0.03
Capital purchases	17.93	27.79	36.38	35.65		32.03	29.78	29.88
Operator interest paid	16.03	17.96	19.80	17.90		18.46	18.67	17.77
Crop returns	320.26	328.93	329.52	335.82		330.49	308.11	351.13
Livestock return above feed	-0.08	0.09	0.20	0.12		0.12	0.06	0.04
Value of farm production	328.52	334.68	335.31	342.90		336.65	313.14	357.40
Total nonfeed cost	368.93	320.59	308.90	305.72		314.88	355.88	298.96
Management returns	-40.13	16.66	27.93	37.76		23.47	-41.29	63.06
Farm investment								
Livestock inventory	122	154	862	762		391	200	25
Grain inventory	57,390	110,492	197,651	328,355		151,867	100,148	127,630
Remaining cost in machinery and auto buildings and fence	7,443 11,404	19,681 16,418	41,225 24,263	68,387 37,315		29,395 20,270	23,904 24,481	17,974 12,354
soil fertility	43	68	90	384		107	137	75
Value of land (current)	561,882	1,134,729	1,944,069	3,120,257		1,507,911	1,042,294	1,236,682
Total farm investment	638,285	1,281,545	2,208,159	3,555,452		1,709,941	1,191,164	1,394,742
Total investment per acre	2,352	2,284	2,278	2,299		2,288	2,311	2,270
Machinery invest. per till. acre	29	36	44	46		41	49	30
Percent tillable land in								
Corn and corn silage	49.3	48.9	48.8	49.1		48.9	48.7	48.7
Soybeans	43.5	43.9	44.4	43.5		43.9	43.3	43.3
Wheat	0.5	1.0	1.0	1.1		1.0	2.0	0.8
Other small grain	0.0	0.1	0.1	0.1		0.1	0.3	0.0
Diverted acres	4.8	4.8	4.7	5.1		4.9	4.5	5.0
All hay and pasture	0.2	0.2	0.1	0.2		0.2	0.4	0.1
Crop yields, bushels per acre								
Corn	141	145	149	149		147	137	152
Soybeans	46	48	47	48		48	45	49
Wheat	72	63	67	62		64	60	67

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 86 to 100 are those with nearly level, well-drained prairie soils.

Table 20. 1990 Average Return, Costs, and Financial Summary by Size and Management Returns for Northern and Central Illinois Grain Farms with Soil Ratings from 56 to 85

Range in size (total acres) Management returns Number of farms	180-339 66	340-799 307	800-1199 149	Over 1199 81	Your Farm	All Farms 603	Low 25% 77	High 25% 77
Total acres in farm	279	587	973	1,604		785	565	654
Acres of tillable land	263	558	916	1,514		743	524	628
Soil rating on tillable land	78	77	76	75		77	78	78
Total months labor	12.1	13.1	16.4	23.0		15.1	13.3	12.9
Months of hired labor	0.5	1.1	3.4	6.7		2.4	1.5	1.0
Beef produced, hundredweight	0	2	5	3		2	0	3
Pork produced, hundredweight	0	0	0	0		0	0	0
Dairy cows, number	0	0	0	0		0	0	0
Dollar returns per farm								
Crop returns	82,491	169,203	280,463	452,394		225,245	139,522	206,818
Livestock returns above feed	3	95	204	37		104	20	85
Custom work	707	2,332	2,884	6,992		2,917	1,888	3,398
Other farm receipts	1,717	2,008	3,366	6,088		2,857	1,254	2,264
Value of farm production	84,918	173,638	286,917	465,492		231,123	142,684	212,565
Dollar costs per farm								
Crop expenses	19,501	40,033	65,237	110,586		53,491	41,097	41,283
Power and equipment	14,720	27,694	46,564	72,648		36,975	30,962	27,159
Building and fence	3,860	6,748	11,790	16,140		8,939	7,790	6,293
Labor	16,235	17,652	22,136	31,669		20,488	17,783	17,406
Livestock services and supplies	52	187	282	221		200	209	122
Taxes	4,917	9,513	15,272	25,171		12,536	9,359	10,283
Insurance and miscellaneous	2,935	5,165	8,581	11,960		6,678	5,464	5,128
Interest on nonland capital	6,529	13,283	22,662	36,569		17,989	13,535	14,161
Land charge or net rent	20,884	43,842	71,140	114,660		57,587	42,738	48,550
Total nonfeed cost	89,633	164,112	263,661	419,622		214,880	168,937	170,386
Capital account adjustment	1,474	1,282	1,988	1,803		1,548	675	3,209
Management returns	(3,240)	10,808	25,244	47,673		17,790	(25,576)	45,388
Farm production per \$1.00 of nonfeed costs	0.95	1.06	1.09	1.11		1.08	0.84	1.25
Farm production per man	83,881	159,284	210,000	243,283		183,368	128,964	197,358
Financial summary								
Cash operating income	80,138	172,202	279,848	453,492		226,510	154,014	202,179
Inventory change	4,119	1,145	7,210	17,450		5,159	(9,195)	8,584
Accts. receivable (net change)	1,860	3,298	5,355	7,231		4,177	1,706	4,456
Farm products used	112	259	459	646		344	214	342
Less purchased feed	1,293	3,198	5,458	13,247		4,897	4,029	2,885
Less purchased livestock	17	69	497	80		170	24	110
Adjusted gross farm income	84,918	173,638	286,917	465,492		231,123	142,684	212,565
Cash operating expense	40,570	78,931	132,617	220,178		106,971	81,845	81,904
Prepaid expense (-if increased)	(761)	(1,108)	(2,646)	(5,760)		(2,075)	165	(2,787)
Accts. payable (+if increased)	(19)	10	(425)	116		(86)	7	(1)
Farm-produced inputs	96	250	427	645		330	209	333
Total operating expense	39,883	78,082	129,971	215,179		105,139	82,225	79,446
Income before depreciation	45,035	95,556	156,947	250,315		125,985	60,458	133,119
Less depreciation	6,617	12,791	22,394	31,309		16,975	14,564	12,116
Capital account adjustment	1,474	1,282	1,988	1,803		1,548	675	3,209
Net farm income *	39,892	84,048	136,542	220,810		110,557	46,569	124,212
(operator's share) *	21,971	35,096	51,423	80,595		43,806	11,132	56,104
Labor & mgt. income per operator	12,397	26,649	40,565	52,928		32,058	(9,864)	61,439
Rate earned on investment, %	4.54	6.09	6.56	6.85		6.38	2.83	8.73

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 56 to 85 are those with poorly drained, heavy-till, and timber soils.

* Interest expense deducted from operator's share only.

Table 20a. 1990 Average Operating Costs, Investments, and Land Use by Size and Management Returns for Northern and Central Illinois Grain Farms with Soil Ratings from 56 to 85

Range in size (total acres) Management returns Number of farms	180-339 66	340-799 307	800-1199 149	Over 1199 81	Your Farm	All Farms 603	340-799 Low 25% 77	High 25% 77
Some costs and returns per tillable acre								
Soil fertility	35.74	33.99	34.14	35.04		34.39	36.91	32.15
Pesticides	22.20	20.73	20.82	21.15		20.93	22.92	17.60
Seed and other crop	16.07	17.01	16.27	16.87		16.71	18.61	16.02
Crop total	74.02	71.73	71.23	73.07		72.03	78.43	65.77
Light vehicle and utilities	6.84	4.15	3.36	2.96		3.69	4.87	3.23
Machinery repairs, supplies	12.58	13.37	13.43	12.46		13.11	16.15	11.82
Machinery hire	7.34	5.01	5.53	6.24		5.60	6.70	3.81
Fuel and oil	10.09	9.33	9.16	9.34		9.31	11.22	8.88
Machinery depreciation	19.03	17.77	19.37	17.00		18.10	20.15	15.53
Power and equipment total	55.87	49.62	50.84	48.00		49.79	59.09	43.27
Drying and storage	6.35	5.40	6.08	5.77		5.75	5.24	5.10
Building repair	2.22	1.55	1.73	1.33		1.57	1.99	1.15
Building depreciation	6.08	5.14	5.06	3.56		4.72	7.64	3.77
Building total	14.65	12.09	12.87	10.66		12.04	14.87	10.03
Labor, unpaid	59.67	28.88	19.10	14.48		23.15	30.30	25.67
Labor, hired	1.96	2.75	5.07	6.45		4.44	3.64	2.06
Labor total	61.62	31.63	24.17	20.92		27.59	33.94	27.73
Value of feed fed	0.06	0.07	0.13	0.07		0.09	0.05	0.08
Capital purchases	32.70	27.96	38.52	32.89		32.71	41.69	23.87
Operator interest paid	14.45	17.71	19.42	17.22		17.97	20.93	17.62
Crop returns	313.11	303.19	306.24	298.90		303.33	266.28	329.49
Livestock return above feed	0.01	0.17	0.22	0.02		0.14	0.04	0.14
Value of farm production	322.33	311.14	313.29	307.56		311.25	272.31	338.65
Total nonfeed cost	340.22	294.07	287.89	277.25		289.37	322.41	271.45
Management returns (12.30)		19.37	27.56	31.50		23.96	(48.81)	72.31
Farm investment								
Livestock inventory	72	173	659	377		309	1	197
Grain inventory	50,753	104,443	165,149	254,437		133,715	91,400	129,962
Remaining cost in machinery and auto buildings and fence	8,964	19,946	40,728	68,178		30,358	23,639	18,396
soil fertility	8,181	15,816	26,048	32,480		19,747	20,857	11,405
Value of land (current)	6	32	132	101		63	8	0
Total farm investment	464,086	974,247	1,580,895	2,548,006		1,279,710	949,744	1,078,882
Total farm investment per acre	532,062	1,114,649	1,813,613	2,903,583		1,463,900	1,085,648	1,238,843
Machinery invest. per till. acre	1,907	1,900	1,864	1,810		1,865	1,920	1,895
Percent tillable land in	34	36	44	45		41	45	29
Corn and corn silage								
Soybeans	55.1	49.3	49.2	51.7		50.2	50.5	47.8
Wheat	33.3	40.1	39.4	35.9		38.5	38.1	41.2
Other small grain	1.8	2.3	2.4	3.7		2.7	2.6	2.1
Diverted acres	0.4	0.2	0.3	0.1		0.2	0.2	0.1
All hay and pasture	6.0	5.5	5.7	6.5		5.8	5.0	5.6
	0.7	0.4	0.5	0.2		0.4	1.0	0.2
Crop yields, bushels per acre								
Corn	130	133	136	135		134	120	141
Soybeans	44	45	45	45		45	40	47
Wheat	48	61	61	54		58	58	63

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 56 to 85 are those with poorly drained, heavy-till, and timber soils.

Table 21. 1990 Average Return, Costs, and Financial Summary by Size and Months of Labor for Northern and Central Illinois Hog Farms with Soil Ratings from 86 to 100

Range in size (total acres) Management returns Number of farms	60-259 23	260-499 44	500-799 61	Over 799 29	Your Farm	All Farms 157	Months of Labor 21-27 32	31-39 18
Total acres in farm	193	365	639	1,125		587	601	768
Acres of tillable land	186	345	601	1,057		553	565	723
Soil rating on tillable land	93	91	91	90		91	90	92
Total months labor	14.3	19.3	26.9	45.0		26.3	24.2	35.3
Months of hired labor	2.5	4.7	12.1	28.7		11.7	9.6	18.0
Beef produced, hundredweight	18	32	148	285		122	140	135
Pork produced, hundredweight	2,610	3,826	5,660	8,597		5,242	4,353	6,828
Dairy cows, number	0	0	0	0		0	0	0
Dollar returns per farm								
Crop returns	60,217	111,089	191,917	335,772		176,543	173,900	245,006
Livestock returns above feed	70,035	102,378	160,560	254,895		148,417	112,687	195,492
Custom work	456	1,331	1,438	6,008		2,108	1,908	1,360
Other farm receipts	316	2,039	2,673	10,518		3,599	3,518	3,224
Value of farm production	131,025	216,838	356,587	607,193		330,668	292,013	445,082
Dollar costs per farm								
Crop expenses	14,065	23,688	43,565	77,074		39,862	41,986	44,648
Power and equipment	19,302	37,726	55,565	95,573		52,643	50,012	70,738
Building and fence	8,664	14,217	25,510	40,391		22,626	15,904	31,780
Labor	20,237	25,334	37,564	64,997		36,665	32,964	50,362
Livestock services and supplies	4,839	8,946	13,621	22,339		12,635	10,484	17,682
Taxes	5,337	7,601	14,158	23,604		12,773	12,307	17,509
Insurance and miscellaneous	3,546	5,757	9,758	16,504		8,973	8,064	13,759
Interest on nonland capital	13,568	22,185	37,731	67,435		35,321	29,303	50,802
Land charge or net rent	17,944	32,239	56,102	98,572		51,669	51,914	69,170
Total nonfeed cost	107,501	177,692	293,574	506,490		273,167	252,939	366,450
Capital account adjustment	361	706	(397)	1,596		391	324	1,278
Management returns	23,885	39,851	62,616	102,299		57,892	39,398	79,910
Farm production per \$1.00 of nonfeed costs	1.22	1.22	1.21	1.20		1.21	1.15	1.21
Farm production per man	109,684	135,044	159,092	161,968		151,106	144,725	151,303
Financial summary								
Cash operating income	179,220	274,690	443,927	718,420		408,422	358,223	542,361
Inventory change	9,187	20,394	24,365	59,372		27,495	24,404	24,899
Accts. receivable (net change)	1,033	2,374	3,222	2,761		2,578	2,683	183
Farm products used	226	416	803	1,383		717	701	1,212
Less purchased feed	52,896	67,229	89,745	134,809		86,360	76,924	113,392
Less purchased livestock	5,745	13,806	25,987	39,935		22,184	17,074	10,181
Adjusted gross farm income	131,025	216,838	356,587	607,193		330,668	292,013	445,082
Cash operating expense	49,450	85,454	150,459	269,334		139,401	129,836	183,120
Prepaid expense (-if increased)	(1,160)	(2,049)	(3,542)	(7,209)		(3,452)	(2,887)	(5,918)
Accts. payable (+if increased)	(331)	(131)	(61)	(316)		(167)	53	(1,281)
Farm-produced inputs	40	149	188	742		258	284	484
Total operating expense	47,996	83,421	147,042	262,549		136,038	127,285	176,403
Income before depreciation	83,029	133,418	209,547	344,644		194,631	164,728	268,679
Less depreciation	12,058	20,181	32,715	55,961		30,470	24,650	46,750
Capital account adjustment	361	706	(397)	1,596		391	324	1,278
Net farm income *	71,333	113,943	176,434	290,280		164,552	140,402	223,207
(operator's share) *	47,021	67,962	92,226	153,923		90,200	67,626	124,449
Labor & mgt. income per operator	39,410	44,928	68,451	99,470		63,334	48,550	70,907
Rate earned on investment, %	10.56	10.21	9.75	9.52		9.79	8.46	9.87

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 86 to 100 are those with nearly level, well-drained prairie soils.

* Interest expense deducted from operator's share only.

Table 21a. 1990 Average Operating Costs, Investments, and Land Use by Size and Months of Labor for Northern and Central Illinois Hog Farms with Soil Ratings from 86 to 100

Range in size (total acres)	60-259	260-499	500-799	Over 799	Your Farm	All Farms	Months of Labor
Management returns							21-27
Number of farms	23	44	61	29		157	32
Some costs and returns per tillable acre							
Soil fertility	33.24	30.24	33.01	32.11		32.22	34.19
Pesticides	24.09	20.70	22.57	22.56		22.31	21.98
Seed and other crop	18.20	17.67	16.92	18.27		17.59	18.10
Crop total	75.53	68.61	72.50	72.93		72.12	74.27
Light vehicle and utilities	20.67	14.61	13.06	12.81		13.62	9.52
Machinery repairs, supplies	24.42	30.32	27.10	26.07		27.17	13.58
Machinery hire	7.18	13.40	8.29	10.05		9.75	22.89
Fuel and oil	17.66	16.53	14.85	13.50		14.81	12.09
Machinery depreciation	33.72	34.42	29.16	28.01		29.90	14.94
Power and equipment total	103.65	109.26	92.46	90.44		95.24	29.02
Drying and storage	7.74	6.48	6.01	5.48		5.99	88.47
Building repair	7.75	10.66	11.17	7.81		9.73	6.43
Building depreciation	31.03	24.03	25.28	24.93		25.22	7.13
Building total	46.52	41.18	42.45	38.22		40.93	14.58
Labor, unpaid	85.58	56.96	33.26	20.79		35.59	28.13
Labor, hired	23.10	16.41	29.25	40.71		30.75	35.00
Labor total	108.68	73.37	62.51	61.51		66.34	23.31
Value of feed fed	378.13	292.84	244.29	213.29		248.44	58.31
Capital purchases	106.64	74.00	89.47	80.60		84.48	214.36
Operator interest paid	39.76	43.13	46.83	40.70		43.67	243.75
Crop returns	323.37	321.74	319.36	317.74		319.40	141.99
Livestock return above feed	376.10	296.51	267.18	241.20		268.52	51.14
Value of farm production	703.61	628.02	593.39	574.58		598.25	307.62
Total nonfeed cost	577.29	514.64	488.53	479.29		494.22	199.34
Management returns	128.26	115.42	104.20	96.80		104.74	270.39
Farm investment							516.55
Livestock inventory	50,622	75,701	121,274	200,311		112,751	447.43
Grain inventory	38,343	68,360	133,878	223,595		118,093	69.69
Remaining cost in							110.53
machinery and auto	10,762	27,011	36,993	81,163		38,511	93,936
buildings and fence	26,125	35,406	65,395	122,311		61,751	149,079
soil fertility	0	57	60	667		163	176,029
Value of land (current)	398,760	716,414	1,246,702	2,190,493		1,148,196	63,997
Total farm investment	524,613	922,949	1,604,304	2,818,539		1,479,465	99,463
Total investment per acre	2,713	2,530	2,510	2,505		2,522	0
Machinery invest. per till. acre	58	78	62	77		70	1,537,099
Percent tillable land in							1,425,237
Corn and corn silage	55.1	56.3	58.5	55.0		56.7	2,371
Soybeans	33.6	32.6	32.2	33.7		32.9	89
Wheat	1.1	1.4	1.6	2.2		1.7	56.4
Other small grain	1.7	1.1	0.2	0.3		0.5	33.4
Diverted acres	5.1	5.4	5.6	5.4		5.5	2.1
All hay and pasture	3.1	2.4	1.6	1.0		1.6	0.7
Crop yields, bushels per acre							4.7
Corn	143	141	141	144		142	2.1
Soybeans	50	50	48	49		49	139
Wheat	66	62	53	65		60	46

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 86 to 100 are those with nearly level, well-drained prairie soils.

Table 22. 1990 Average Return, Costs, and Financial Summary by Size and Months of Labor for Northern and Central Illinois Hog Farms with Soil Ratings from 56 to 85

Range in size (total acres) Management returns Number of farms	60-259 42	260-499 76	500-799 70	Over 799 54	Your Farm	All Farms 242	Months of Labor 21-27 57	31-39 25
Total acres in farm	191	388	627	1,172		598	633	819
Acres of tillable land	176	350	540	995		518	543	673
Soil rating on tillable land	75	76	75	74		75	75	76
Total months labor	15.0	17.9	24.6	40.7		24.4	24.2	35.0
Months of hired labor	2.3	4.4	9.6	22.2		9.5	8.7	16.1
Beef produced, hundredweight	92	219	328	407		270	313	526
Pork produced, hundredweight	2,645	3,024	4,674	7,754		4,491	4,787	6,401
Dairy cows, number	1	0	1	0		0	0	3
Dollar returns per farm								
Crop returns	51,067	101,969	157,658	298,285		153,049	164,674	205,111
Livestock returns above feed	73,394	83,026	133,415	230,023		128,731	131,236	194,430
Custom work	485	1,062	1,225	3,651		1,587	1,721	2,882
Other farm receipts	1,118	1,414	1,884	6,117		2,548	2,577	4,201
Value of farm production	126,065	187,470	294,182	538,074		285,914	300,208	406,626
Dollar costs per farm								
Crop expenses	12,265	25,009	39,292	70,074		36,984	40,035	45,781
Power and equipment	25,495	35,077	51,927	83,397		49,079	52,917	72,973
Building and fence	10,248	13,581	19,042	33,729		19,078	18,676	33,239
Labor	20,576	23,528	36,260	62,536		35,403	32,436	47,914
Livestock services and supplies	6,215	7,021	11,097	17,877		10,483	11,619	16,405
Taxes	3,346	6,190	10,078	17,817		9,416	9,927	12,817
Insurance and miscellaneous	4,095	4,910	7,946	13,821		7,635	7,576	11,502
Interest on nonland capital	14,817	22,324	34,404	58,798		32,654	35,065	49,303
Land charge or net rent	13,395	27,101	42,283	76,305		40,093	41,661	52,260
Total nonfeed cost	110,453	164,741	252,327	434,352		240,815	249,911	342,194
Capital account adjustment	831	758	1,042	990		905	626	2,099
Management returns	16,443	23,487	42,897	104,713		46,004	50,923	66,530
Farm production per \$1.00 of nonfeed costs	1.14	1.14	1.17	1.24		1.19	1.20	1.19
Farm production per man	101,012	125,947	143,495	158,791		140,623	148,788	139,510
Financial summary								
Cash operating income	183,833	244,460	379,193	649,822		363,363	387,885	529,475
Inventory change	12,479	16,856	34,989	57,985		30,519	27,413	58,854
Accts. receivable (net change)	1,230	2,172	3,573	5,291		3,110	3,513	3,962
Farm products used	344	595	530	862		592	626	915
Less purchased feed	55,272	56,296	89,225	129,605		82,002	85,016	112,294
Less purchased livestock	16,546	20,317	34,856	46,281		29,662	34,215	74,218
Adjusted gross farm income	126,068	187,470	294,206	538,074		285,922	300,208	406,693
Cash operating expense	51,111	78,755	129,542	231,362		122,700	123,296	177,372
Prepaid expense (-if increased)	(1,178)	(1,834)	(1,851)	(3,627)		(2,125)	(2,386)	(5,641)
Accts. payable (+if increased)	69	74	(35)	305		93	0	0
Farm-produced inputs	54	71	130	365		151	101	331
Total operating expense	50,055	77,066	127,783	228,404		120,818	121,009	172,061
Income before depreciation	76,013	110,405	166,424	309,673		165,105	179,199	234,632
Less depreciation	15,024	20,097	27,690	45,972		27,186	31,262	43,123
Capital account adjustment	831	758	1,042	990		905	626	2,099
Net farm income *	61,819	91,066	139,776	264,691		138,823	148,563	193,609
(operator's share) *	39,816	52,035	80,964	152,027		80,594	85,470	105,587
Labor & mgt. income per operator	30,870	38,324	50,535	86,807		51,381	57,106	70,331
Rate earned on investment, %	10.28	8.96	9.49	10.75		9.95	10.14	10.39

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 56 to 85 are those with poorly drained, heavy-till, and timber soils. * Interest expense deducted from operator's share only.

Table 22a. 1990 Average Operating Costs, Investments, and Land Use by Size and Months of Labor for Northern and Central Illinois
Hog Farms with Soil Ratings from 56 to 85

Range in size (total acres)	60-259	260-499	500-799	Over 799	Your Farm	All Farms	Months of Labor
Management returns							21-27
Number of farms	42	76	70	54		242	57
Some costs and returns per tillable acre							
Soil fertility	30.38	32.01	32.76	31.44		31.89	32.15
Pesticides	21.24	22.10	23.00	21.61		22.11	23.88
Seed and other crop	18.18	17.38	17.06	17.37		17.33	17.75
Crop total	69.81	71.49	72.82	70.42		71.34	73.78
Light vehicle and utilities	22.47	13.92	12.40	11.51		12.93	12.08
Machinery repairs, supplies	37.33	25.58	27.98	24.66		26.60	26.00
Machinery hire	11.10	12.52	8.30	5.98		8.36	7.23
Fuel and oil	22.22	15.02	15.91	15.48		15.91	15.19
Machinery depreciation	51.99	33.23	31.66	26.18		30.84	37.01
Power and equipment total	145.11	100.27	96.24	83.81		94.65	97.52
Drying and storage	6.59	5.00	6.24	4.80		5.38	6.39
Building repair	18.22	9.62	9.44	9.11		9.85	7.49
Building depreciation	33.53	24.21	19.62	19.98		21.56	20.54
Building total	58.33	38.82	35.29	33.90		36.80	34.42
Labor, unpaid	97.70	51.90	37.42	25.00		38.71	38.54
Labor, hired	19.42	15.36	29.78	37.85		29.57	21.23
Labor total	117.11	67.26	67.20	62.85		68.29	59.77
Value of feed fed	427.48	265.41	259.00	213.04		250.58	256.24
Capital purchases	114.68	65.71	64.66	68.83		69.61	63.55
Operator interest paid	49.88	31.02	41.62	33.19		36.25	28.10
Crop returns	290.67	291.49	292.20	299.77		295.20	303.47
Livestock return above feed	417.75	237.34	247.27	231.17		248.30	241.85
Value of farm production	717.54	535.91	545.23	540.76		551.47	553.24
Total nonfeed cost	628.68	470.94	467.66	436.52		464.49	460.55
Management returns	93.59	67.14	79.50	105.24		88.73	93.84
Farm investment							
Livestock inventory	61,295	83,257	130,818	210,220		121,533	127,350
Grain inventory	33,791	65,569	96,896	171,945		92,852	104,015
Remaining cost in							
machinery and auto	14,373	24,012	41,584	59,887		35,427	42,960
buildings and fence	27,140	38,888	51,491	92,399		52,435	58,892
soil fertility	0	212	159	153		147	159
Value of land (current)	297,668	602,252	939,624	1,695,661		890,961	925,811
Total farm investment	434,268	814,192	1,260,572	2,230,266		1,193,355	1,259,186
Total investment per acre	2,276	2,099	2,009	1,903		1,996	1,989
Machinery invest. per till. acre	82	69	77	60		68	79
Percent tillable land in							
Corn and corn silage	61.1	59.8	57.4	52.9		56.2	59.7
Soybeans	23.0	22.6	26.4	31.8		27.7	24.0
Wheat	2.9	2.8	3.4	5.3		4.1	4.3
Other small grain	3.0	2.1	1.1	0.6		1.2	1.2
Diverted acres	4.4	6.2	6.9	6.1		6.3	6.4
All hay and pasture	3.8	5.5	4.7	2.5		3.9	4.0
Crop yields, bushels per acre							
Corn	131	131	133	136		133	135
Soybeans	46	45	45	45		45	46
Wheat	63	52	57	55		55	53

Note: Variations in totals are due to rounding to the nearest dollar. Farms with soil ratings from 56 to 85 are those with poorly drained, heavy-till, and timber soils.

Table 23. 1990 Average Return, Costs, and Financial Summary by Size and Management Returns for Southern Illinois Grain Farms with Soil Ratings from 36 to 85

Range in size (total acres) Management returns Number of farms	180-339 46	340-799 254	800-1199 145	Over 1199 140	Your Farm	All Farms 585	Low 25% 64	340-799 High 25% 64
Total acres in farm	278	579	952	1,775		934	583	597
Acres of tillable land	254	533	869	1,636		858	521	561
Soil rating on tillable land	57	60	59	59		59	58	61
Total months labor	12.1	14.2	18.4	30.7		19.0	15.0	13.2
Months of hired labor	0.5	1.8	4.9	14.0		5.4	1.9	1.0
Beef produced, hundredweight	118	83	76	124		94	96	85
Pork produced, hundredweight	103	153	317	583		293	83	282
Dairy cows, number	0	0	0	0		0	0	0
Dollar returns per farm								
Crop returns	56,645	119,584	197,488	388,604		198,325	97,693	146,677
Livestock returns above feed	4,945	5,468	10,037	17,490		9,436	2,085	9,601
Custom work	505	1,105	2,327	3,896		2,028	968	1,563
Other farm receipts	837	1,775	2,994	6,356		3,100	1,111	1,540
Value of farm production	62,931	127,932	212,845	416,345		212,890	101,856	159,381
Dollar costs per farm								
Crop expenses	14,848	33,331	53,146	104,797		53,892	33,588	32,921
Power and equipment	18,520	29,335	47,427	87,915		46,988	33,221	28,398
Building and fence	2,639	4,327	7,664	14,657		7,494	4,117	5,048
Labor	16,202	18,749	24,704	40,295		25,181	20,000	17,736
Livestock services and supplies	472	565	1,054	1,488		900	513	688
Taxes	2,338	4,716	7,440	13,048		7,198	4,230	5,142
Insurance and miscellaneous	2,163	3,902	6,042	10,461		5,865	4,101	3,652
Interest on nonland capital	6,812	11,256	18,064	37,150		18,791	11,807	11,817
Land charge or net rent	12,295	28,047	45,023	83,918		44,387	28,088	29,529
Total nonfeed cost	76,288	134,226	210,562	393,723		210,693	139,665	134,931
Capital account adjustment	262	1,072	891	2,519		1,310	572	2,450
Management returns	(13,094)	(5,222)	3,175	25,141		3,506	(37,235)	26,900
Farm production per \$1.00 of nonfeed costs	0.82	0.95	1.01	1.06		1.01	0.73	1.18
Farm production per man	62,311	107,816	138,516	162,840		134,115	81,214	144,516
Financial summary								
Cash operating income	71,142	138,011	223,940	441,274		226,627	129,422	163,314
Inventory change	370	(1,409)	(332)	(1,594)		(1,047)	(15,011)	8,162
Accts. receivable (net change)	(12)	52	727	1,353		525	(379)	618
Farm products used	497	1,257	1,175	1,700		1,283	764	726
Less purchased feed	2,650	4,324	7,928	19,572		8,735	3,169	6,527
Less purchased livestock	6,415	5,653	4,736	6,814		5,764	9,769	6,911
Adjusted gross farm income	62,931	127,932	212,845	416,345		212,890	101,856	159,381
Cash operating expense	32,855	64,865	109,815	214,449		109,287	65,278	66,709
Prepaid expense (-if increased)	(158)	(319)	(441)	(4,001)		(1,218)	568	(1,351)
Accts. payable (+if increased)	(26)	261	140	842		347	822	140
Farm-produced inputs	332	1,121	1,003	1,471		1,113	605	624
Total operating expense	33,001	65,926	110,515	212,760		109,529	67,273	66,121
Income before depreciation	29,930	62,009	102,334	203,583		103,363	34,583	93,260
Less depreciation	8,464	12,224	18,653	37,345		19,533	14,791	11,012
Capital account adjustment	262	1,072	891	2,519		1,310	572	2,450
Net farm income *	21,728	50,857	84,572	168,759		85,139	20,364	84,699
(operator's share) *	8,098	16,979	27,343	56,610		28,334	(3,022)	38,241
Labor & mgt. income per operator	2,279	10,687	19,289	35,409		18,074	(20,323)	42,467
Rate earned on investment, %	1.77	4.65	5.64	6.55		5.70	0.36	8.79

Note: Variations in totals are due to rounding to the nearest dollar.

* Interest expense deducted from operator's share only.

Table 23a. 1990 Average Operating Costs, Investments, and Land Use by Size and Management Returns for Southern Illinois Grain Farms
with Soil Ratings from 36 to 85

Range in size (total acres) Management returns Number of farms	180-339 46	340-799 254	800-1199 145	Over 1199 140	Your Farm	All Farms 585	340-799 Low 25% 64	High 25% 64
Some costs and returns per tillable acre								
Soil fertility	27.80	28.94	27.37	30.19		29.09	30.66	26.77
Pesticides	16.46	17.60	19.01	18.52		18.35	17.99	16.96
Seed and other crop	14.21	16.05	14.79	15.32		15.36	15.77	15.00
Crop total	58.48	62.59	61.17	64.04		62.80	64.42	58.73
Light vehicle and utilities	6.95	4.30	3.98	3.24		3.80	4.52	4.49
Machinery repairs, supplies	18.18	16.22	16.56	16.14		16.31	18.19	14.81
Machinery hire	6.87	4.53	5.01	4.86		4.86	5.74	4.52
Fuel and oil	12.37	10.68	10.72	10.61		10.70	11.19	10.27
Machinery depreciation	28.56	19.36	18.31	18.87		19.09	24.09	16.57
Power and equipment total	72.94	55.08	54.59	53.73		54.75	63.72	50.66
Drying and storage	2.64	2.68	3.54	3.64		3.33	1.95	3.90
Building repair	3.05	1.89	2.14	1.45		1.78	1.67	2.03
Building depreciation	4.70	3.55	3.14	3.87		3.62	4.28	3.08
Building total	10.39	8.13	8.82	8.96		8.73	7.90	9.01
Labor, unpaid	61.89	31.50	21.07	13.78		21.50	33.96	29.35
Labor, hired	1.92	3.71	7.36	10.84		7.84	4.40	2.29
Labor total	63.81	35.21	28.43	24.62		29.34	38.36	31.64
Value of feed fed	30.12	15.30	13.57	12.56		13.96	13.95	19.71
Capital purchases	37.80	28.27	27.63	34.82		31.32	34.65	27.87
Operator interest paid	19.04	20.65	21.05	19.52		20.20	16.46	22.35
Crop returns	223.09	224.55	227.30	237.48		231.11	187.38	261.65
Livestock return above feed	19.47	10.27	11.55	10.69		11.00	4.00	17.13
Value of farm production	247.85	240.23	244.97	254.43		248.08	195.36	284.31
Total nonfeed cost	300.45	252.05	242.34	240.61		245.52	267.88	240.70
Management returns	(51.57)	(9.81)	3.65	15.36		4.09	(71.42)	47.99
Farm investment								
Livestock inventory	14,323	13,127	15,915	25,847		16,956	13,671	14,560
Grain inventory	31,246	65,622	108,472	226,755		112,102	62,672	78,287
Remaining cost in machinery and auto buildings and fence	14,808	22,832	37,394	86,711		41,097	25,286	20,734
soil fertility	5,426	8,138	11,693	27,034		13,328	11,857	6,861
Value of land (current)	11	31	35	293		93	10	0
Total farm investment	273,225	623,277	1,000,526	1,864,850		986,386	624,177	656,200
Total farm investment	339,040	733,029	1,174,034	2,231,473		1,169,959	737,672	776,641
Total investment per acre	1,221	1,266	1,233	1,257		1,252	1,265	1,301
Machinery invest. per till. acre	58	43	43	53		48	48	37
Percent tillable land in								
Corn and corn silage	33.0	33.2	33.8	35.0		34.2	26.4	39.3
Soybeans	37.1	39.2	40.6	38.6		39.2	39.0	39.8
Wheat	13.6	16.6	15.5	15.0		15.5	19.8	14.1
Other small grain	0.0	0.0	0.0	0.0		0.0	0.1	0.0
Diverted acres	5.8	5.1	5.8	5.9		5.6	5.6	4.9
All hay and pasture	6.6	2.6	2.2	1.7		2.2	3.7	1.2
Crop yields, bushels per acre								
Corn	109	111	111	116		113	92	123
Soybeans	35	34	35	36		35	31	39
Wheat	45	46	45	43		44	44	48

Note: Variations in totals are due to rounding to the nearest dollar.

Table 24. 1990 Average Return, Costs, and Financial Summary by Size and Months of Labor for Southern Illinois Hog Farms with Soil Ratings from 36 to 85

Range in size (total acres)	60-259	260-499	500-799	Over 799	Your Farm	All Farms	Months of Labor 21-27 30	31-39 15
Number of farms	15	51	50	49		165		
Total acres in farm	169	375	630	1,225		686	688	947
Acres of tillable land	148	326	562	1,074		603	591	828
Soil rating on tillable land	60	59	59	59		59	59	58
Total months labor	16.5	16.8	21.0	39.2		24.7	24.5	34.1
Months of hired labor	3.3	3.3	7.5	19.3		9.3	9.0	10.8
Beef produced, hundredweight	44	88	107	353		168	89	339
Pork produced, hundredweight	3,183	3,018	3,856	7,380		4,583	5,000	5,286
Dairy cows, number	0	0	2	0		0	0	0
Dollar returns per farm								
Crop returns	37,402	74,151	121,880	260,671		140,664	135,450	199,040
Livestock returns above feed	85,033	72,901	100,902	198,064		119,659	128,700	135,177
Custom work	787	326	1,147	2,566		1,282	1,806	1,499
Other farm receipts	3,124	2,635	3,413	4,574		3,491	5,531	3,886
Value of farm production	126,346	150,014	227,342	465,874		265,096	271,489	339,602
Dollar costs per farm								
Crop expenses	9,426	22,378	38,264	72,262		40,828	42,866	52,973
Power and equipment	22,621	28,397	46,063	93,114		52,444	53,744	71,467
Building and fence	9,946	10,554	14,807	25,980		16,369	19,449	20,623
Labor	23,596	22,873	28,193	53,111		33,531	33,483	46,625
Livestock services and supplies	5,280	6,232	8,046	17,023		9,900	12,857	9,824
Taxes	1,907	3,411	5,502	10,184		5,919	5,980	7,965
Insurance and miscellaneous	2,536	4,051	6,215	12,947		7,211	7,285	7,780
Interest on nonland capital	13,967	16,430	24,735	51,903		29,257	30,790	38,930
Land charge or net rent	8,362	17,283	29,598	57,185		32,054	30,495	42,243
Total nonfeed cost	97,640	131,608	201,422	393,709		227,512	236,949	298,429
Capital account adjustment	15	556	1,010	4,634		1,855	269	3,839
Management returns	28,721	18,961	26,929	76,800		39,439	34,808	45,013
Farm production per \$1.00 of nonfeed costs	1.29	1.14	1.13	1.18		1.17	1.15	1.14
Farm production per man	91,629	106,903	129,960	142,637		128,741	132,974	119,532
Financial summary	204,201	212,980	307,608	600,051		355,805	359,064	473,373
Cash operating income	13,448	13,781	7,016	19,090		13,277	16,048	3,729
Inventory change	0	(26)	511	1,282		527	198	1,816
Accts. receivable (net change)	357	805	770	1,857		1,066	697	2,410
Farm products used	74,241	57,702	72,377	126,487		84,079	91,091	103,141
Less purchased feed	17,419	19,824	16,185	29,919		21,501	13,428	38,585
Less purchased livestock	126,346	150,014	227,342	465,874		265,096	271,489	339,602
Adjusted gross farm income	44,472	66,472	108,755	220,096		122,907	127,132	156,246
Cash operating expense								
Prepaid expense (-if increased)	(860)	(674)	(1,861)	(6,020)		(2,638)	(1,027)	(4,573)
Accts. payable (+if increased)	147	(117)	(14)	(49)		(41)	228	0
Farm-produced inputs	154	225	376	1,344		597	262	1,947
Total operating expense	43,913	65,905	107,254	215,369		120,822	126,593	153,619
Income before depreciation	82,433	84,109	120,089	250,507		144,275	144,896	185,984
Less depreciation	13,488	13,739	21,570	42,365		24,590	28,102	32,191
Capital account adjustment	15	556	1,010	4,634		1,855	269	3,839
Net farm income *	68,960	70,926	99,529	212,776		121,540	117,063	157,632
(operator's share) *	50,794	43,733	59,003	130,976		74,911	72,697	101,272
Labor & mgt. income per operator	41,803	33,196	41,953	71,325		47,955	46,715	42,536
Rate earned on investment, %	16.28	9.81	9.17	10.58		10.23	10.00	9.65

Note: Variations in totals are due to rounding to the nearest dollar.

* Interest expense deducted from operator's share only.

Table 24a. 1990 Average Operating Costs, Investments, and Land Use by Size and Management Returns for Southern Illinois Hog Farms with Soil Ratings from 36 to 85

Range in size (total acres)	60-259	260-499	500-799	Over 799	Your Farm	All Farms	Months of Labor	
Number of farms	15	51	50	49		165	21-27	31-39
							30	15
Some costs and returns per tillable acre								
Soil fertility	29.28	32.87	31.61	31.22		31.56	34.90	28.89
Pesticides	17.85	19.40	19.38	20.07		19.71	19.97	20.16
Seed and other crop	16.39	16.31	17.11	16.03		16.39	17.65	14.96
Crop total	63.52	68.57	68.10	67.31		67.66	72.52	64.00
Light vehicle and utilities	27.67	13.50	12.54	10.01		11.70	13.89	9.31
Machinery repairs, supplies	40.97	26.72	24.33	25.74		25.84	26.82	27.87
Machinery hire	6.42	5.49	6.87	8.65		7.57	4.09	7.49
Fuel and oil	22.56	16.46	15.20	15.13		15.54	15.62	15.22
Machinery depreciation	54.83	24.84	23.04	27.21		26.26	30.51	26.46
Power and equipment total	152.43	87.01	81.98	86.73		86.91	90.93	86.35
Drying and storage	4.35	5.06	4.64	5.94		5.39	6.50	6.08
Building repair	26.61	10.12	6.36	6.01		7.26	9.46	6.40
Building depreciation	36.06	17.16	15.35	12.25		14.48	16.95	12.43
Building total	67.02	32.34	26.35	24.20		27.13	32.91	24.92
Labor, unpaid	120.69	55.93	32.51	25.04		34.45	35.48	37.99
Labor, hired	38.31	14.16	17.67	24.43		21.11	21.17	18.34
Labor total	159.00	70.09	50.17	49.47		55.56	56.65	56.33
Value of feed fed	566.89	264.63	196.31	194.24		214.92	234.40	190.43
Capital purchases	128.68	60.67	48.75	42.77		49.37	61.07	52.31
Operator interest paid	50.09	50.29	29.94	25.89		31.65	36.28	17.80
Crop returns	252.04	227.21	216.91	242.81		233.10	229.16	240.48
Livestock return above feed	573.00	223.38	179.57	184.49		198.29	217.74	163.32
Value of farm production	851.39	459.67	404.60	433.96		439.30	459.32	410.31
Total nonfeed cost	657.95	403.27	358.47	366.74		377.02	400.88	360.57
Management returns	193.54	58.10	47.93	71.54		65.36	58.89	54.39
Farm investment								
Livestock inventory	63,219	66,386	88,203	167,669		102,787	100,547	140,715
Grain inventory	29,092	48,206	78,347	189,923		97,687	96,195	151,108
Remaining cost in								
machinery and auto	14,370	17,740	30,129	78,415		39,207	47,173	47,768
buildings and fence	21,146	20,646	31,285	49,476		32,477	39,027	29,470
soil fertility	0	91	40	13		44	236	0
Value of land (current)	185,813	384,071	657,743	1,270,782		712,305	677,665	938,729
Total farm investment	313,639	537,139	885,748	1,756,278		984,507	960,844	1,307,788
Total investment per acre	1,859	1,434	1,405	1,434		1,435	1,397	1,381
Machinery invest. per till. acre	97	54	54	73		65	80	58
Percent tillable land in								
Corn and corn silage	44.7	41.9	40.1	42.0		41.5	39.2	40.2
Soybeans	25.2	30.2	33.7	36.3		34.3	35.8	35.6
Wheat	11.8	17.8	14.8	11.6		13.5	13.1	12.3
Other small grain	0.0	0.5	0.0	0.0		0.1	0.5	0.0
Diverted acres	2.8	3.7	5.1	4.6		4.5	5.1	4.6
All hay and pasture	8.6	3.4	4.6	2.7		3.5	2.3	4.7
Crop yields, bushels per acre								
Corn	116	112	109	116		114	119	117
Soybeans	42	37	36	38		37	36	37
Wheat	48	47	42	45		45	44	45

Note: Variations in totals are due to rounding to the nearest dollar.

Table 25. 1990 Average Return, Costs, and Financial Summary by Number of Cows in Herd for Illinois Dairy Farms

Area of state	Northern Illinois				Southern Illinois			
	10-39	40-79	Over 79	All Farms	10-39	40-79	Over 79	All Farms
Number of cows in herd	13	107	37	157	5	39	38	82
Number of farms	13	107	37	157	5	39	38	82
Total acres in farm	195	335	505	363	311	381	651	502
Acres of tillable land	169	287	424	309	262	353	598	461
Soil rating on tillable land	81	72	72	73	59	62	59	60
Total months labor	14.1	21.2	33.7	23.6	20.4	24.2	34.3	28.6
Months of hired labor	1.1	5.4	12.4	6.7	6.0	9.1	14.3	11.3
Beef produced, hundredweight	214	419	854	505	178	416	788	574
Pork produced, hundredweight	195	135	187	152	0	65	127	90
Dairy cows, number	30	56	102	64	34	60	160	105
Dollar returns per farm								
Crop returns	42,869	83,564	132,854	91,811	51,321	77,361	161,633	114,826
Livestock returns above feed	41,918	81,691	174,326	100,229	39,348	85,784	155,395	115,211
Custom work	342	926	419	758	110	309	976	606
Other farm receipts	1,388	2,241	6,407	3,152	3,651	6,656	15,371	10,511
Value of farm production	86,517	168,421	314,007	195,949	94,431	170,110	333,375	241,155
Dollar costs per farm								
Crop expenses	8,841	18,350	30,891	20,518	12,829	22,768	44,813	32,378
Power and equipment	17,966	36,556	66,332	42,034	18,338	43,675	75,466	56,862
Building and fence	6,174	10,055	25,843	13,455	4,065	6,423	14,171	9,870
Labor	21,010	28,696	48,053	32,622	28,150	32,820	45,898	38,595
Livestock services and supplies	7,767	13,015	26,690	15,803	4,652	9,729	21,469	14,860
Taxes	3,509	5,442	8,784	6,069	2,736	3,024	4,898	3,875
Insurance and miscellaneous	2,656	4,088	7,044	4,666	2,549	4,526	7,154	5,623
Interest on nonland capital	11,513	22,265	41,555	25,921	9,416	19,650	41,306	29,062
Land charge or net rent	14,069	20,935	30,618	22,648	13,742	19,576	30,997	24,513
Total nonfeed cost	93,506	159,401	285,810	183,735	96,476	162,189	286,172	215,637
Capital account adjustment	0	927	1,128	897	60	666	677	634
Management returns	(6,987)	9,947	29,325	13,112	(1,985)	8,587	47,880	26,151
Farm production per \$1.00 of nonfeed costs	0.93	1.06	1.10	1.07	0.98	1.05	1.16	1.12
Farm production per man	73,874	95,350	111,714	99,811	55,439	84,307	116,749	101,037
Financial summary								
Cash operating income	101,974	195,084	368,597	228,266	112,588	202,064	413,622	294,647
Inventory change	5,178	9,159	13,278	9,800	(2,213)	4,007	4,722	3,959
Accts. receivable (net change)	969	1,008	362	852	74	(20)	95	39
Farm products used	804	1,663	2,536	1,797	948	1,651	5,070	3,192
Less purchased feed	15,670	28,352	63,609	35,611	16,483	31,980	74,345	50,668
Less purchased livestock	6,356	9,236	5,713	8,167	195	5,237	14,696	9,313
Adjusted gross farm income	86,900	169,327	315,450	196,938	94,718	170,484	334,468	241,856
Cash operating expense	41,875	78,320	151,653	92,585	51,775	83,072	154,199	114,125
Prepaid expense (-if increased)	(10)	(1,180)	(1,763)	(1,220)	(3,497)	233	(722)	(437)
Accts. payable (+if increased)	311	80	(86)	60	(65)	0	0	(3)
Farm-produced inputs	396	933	1,465	1,014	287	860	3,514	2,055
Total operating expense	42,571	78,152	151,268	92,437	48,498	84,165	156,989	115,738
Income before depreciation	44,328	91,176	164,181	104,502	46,220	86,319	177,478	126,118
Less depreciation	8,184	17,645	35,059	20,965	5,668	18,785	31,007	23,649
Capital account adjustment	0	927	1,128	897	60	666	677	634
Net farm income *	36,144	74,457	130,250	84,434	40,612	68,200	147,148	103,104
(operator's share) *	25,520	43,304	84,683	51,583	29,560	43,316	97,110	67,406
Labor & mgt. income per operator	8,900	25,524	35,561	26,513	14,214	24,288	51,734	36,393
Rate earned on investment, %	4.45	7.95	9.66	8.36	5.40	7.88	11.36	9.93

Note: Variations in totals are due to rounding to the nearest dollar. Northern Illinois includes both northern and central Illinois.

* Interest expense deducted from operator's share only.

Table 25a. 1990 Average Operating Costs, Investments, and Land Use by Number of Cows in Herd for Illinois Dairy Farms

Area of state	Northern Illinois				Southern Illinois			
	10-39 13	40-79 107	Over 79 37	All Farms 157	10-39 5	40-79 39	Over 79 38	All Farms 82
Number of cows in herd								
Number of farms								
Some costs and returns per tillable acre								
Soil fertility	25.58	30.36	34.70	31.55	26.81	33.20	32.82	32.75
Pesticides	11.15	17.04	20.76	17.97	7.60	15.77	21.07	18.67
Seed and other crop	15.73	16.63	17.33	16.82	14.60	15.59	21.07	18.85
Crop total	52.46	64.02	72.79	66.33	49.00	64.56	74.96	70.27
Light vehicle and utilities	16.51	17.05	21.69	18.53	13.04	16.84	14.58	15.35
Machinery repairs, supplies	29.16	39.45	46.52	41.27	23.78	37.55	43.24	40.49
Machinery hire	13.83	11.80	20.69	14.77	2.07	7.88	10.88	10.08
Fuel and oil	17.44	18.91	20.75	19.44	13.93	18.66	18.36	18.32
Machinery depreciation	29.65	40.33	46.64	41.89	17.22	42.92	38.18	39.18
Power and equipment total	106.60	127.54	156.30	135.90	70.05	123.84	126.24	123.42
Drying and storage	3.02	4.76	6.46	5.23	5.16	1.19	3.12	2.49
Building repair	14.70	9.10	18.46	12.38	5.94	6.68	6.90	6.79
Building depreciation	18.91	21.22	35.96	25.89	4.43	10.35	13.69	12.15
Building total	36.63	35.08	60.89	43.50	15.53	18.21	23.70	21.42
Labor, unpaid	104.13	74.35	67.75	73.56	74.26	57.81	45.10	50.74
Labor, hired	20.53	25.77	45.48	31.91	33.27	35.25	31.67	33.03
Labor total	124.66	100.12	113.22	105.46	107.53	93.06	76.78	83.77
Value of feed fed	230.68	268.27	322.49	284.11	146.96	200.52	267.92	239.19
Capital purchases	54.54	74.00	97.76	80.81	13.21	59.14	79.78	69.96
Operator interest paid	33.90	49.87	43.90	47.22	35.44	33.11	45.59	40.69
Crop returns	254.36	291.55	313.04	296.82	196.03	219.36	270.37	249.23
Livestock return above feed	248.71	285.02	410.75	324.04	150.30	243.24	259.94	250.06
Value of farm production	513.34	587.62	739.87	633.50	360.70	482.35	557.66	523.42
Total nonfeed cost	554.80	556.15	673.44	594.01	368.51	459.89	478.70	468.03
Management returns	(41.46)	34.71	69.10	42.39	(7.58)	24.35	80.09	56.76
Farm investment								
Livestock inventory	44,110	78,765	140,903	90,540	30,958	76,932	174,960	119,556
Grain inventory	26,276	51,782	86,400	57,828	39,051	45,959	91,789	66,776
Remaining cost in machinery and auto buildings and fence	11,144 23,657	28,722 43,769	53,668 88,970	33,146 52,756	8,045 8,714	29,337 19,763	62,267 39,835	43,299 28,391
soil fertility	0	535	114	391	0	0	0	0
Value of land (current)	312,649	465,217	680,406	503,298	305,370	435,015	688,825	544,729
Total farm investment	417,837	668,790	1,050,459	737,958	392,137	607,005	1,057,674	802,750
Total investment per acre	2,138	1,997	2,080	2,031	1,259	1,591	1,625	1,599
Machinery invest. per till. acre	66	100	126	107	31	83	104	94
Percent tillable land in								
Corn and corn silage	43.5	52.1	50.1	51.1	31.9	33.1	38.0	36.0
Soybeans	10.4	6.5	10.1	7.8	25.7	24.2	24.5	24.4
Wheat	2.7	0.8	1.4	1.1	12.8	17.2	15.4	16.0
Other small grain	8.9	5.0	4.4	5.0	0.0	0.1	0.0	0.1
Diverted acres	3.6	4.8	3.9	4.4	5.2	3.2	3.6	3.5
All hay and pasture	30.6	29.9	28.3	29.4	22.9	20.3	17.3	18.6
Crop yields, bushels per acre								
Corn	121	131	135	132	101	100	108	105
Soybeans	45	44	51	47	30	33	36	35
Wheat	46	48	52	49	47	40	38	39

Note: Variations in totals are due to rounding to the nearest dollar. Northern Illinois includes both northern and central Illinois.

Table 26. 1990 Average Return, Costs, and Financial Summary by Size and Months of Labor for Illinois Beef Farms

Area of state	Northern Illinois					Months of Labor		Southern Illinois
	180-339	340-799	Over 799	All Farms	Your Farm	21-27	31-39	
Range in size (total acres)	16	49	24	89		11	12	
Number of farms	16	49	24	89		712	1,000	24
Total acres in farm	255	529	1,111	637		622	912	553
Acres of tillable land	226	466	1,006	568		77	83	395
Soil rating on tillable land	79	78	82	79		23.7	35.9	51
Total months labor	14.0	19.0	29.6	21.0		8.7	19.1	19.7
Months of hired labor	2.2	6.4	13.2	7.5		3044	5100	928
Beef produced, hundredweight	1212	2724	4968	3057		1,421	1,447	520
Pork produced, hundredweight	66	620	1,442	742		0	0	0
Dairy cows, number	0	0	0	0				
Dollar returns per farm						198,087	309,956	73,899
Crop returns	71,670	151,286	324,835	183,773		108,736	176,379	36,003
Livestock returns above feed	33,103	83,960	168,098	97,506		1,393	4,459	895
Custom work	1,209	1,212	3,225	1,754		2,372	3,708	2,239
Other farm receipts	1,067	2,134	3,026	2,182				
Value of farm production	107,048	238,593	499,185	285,216		310,588	494,502	113,037
Dollar costs per farm								
Crop expenses	15,219	38,581	85,311	46,983		48,203	74,411	19,425
Power and equipment	24,773	43,456	88,600	52,271		54,726	89,758	27,676
Building and fence	6,160	15,123	22,627	15,535		17,156	29,805	4,931
Labor	18,947	25,967	40,994	28,757		33,604	45,341	25,560
Livestock services and supplies	3,680	7,131	13,806	8,311		9,272	14,347	4,343
Taxes	4,687	9,734	20,548	11,743		12,611	19,141	3,538
Insurance and miscellaneous	3,799	6,089	11,250	7,069		8,158	12,128	3,335
Interest on nonland capital	19,330	43,482	87,199	50,929		52,429	92,941	19,811
Land charge or net rent	17,780	38,348	85,611	47,395		50,868	76,355	18,223
Total nonfeed cost	114,374	227,912	455,946	268,993		287,027	454,226	126,842
Capital account adjustment	526	409	253	388		114	492	687
Management returns	(6,799)	11,091	43,491	16,612		23,674	40,769	(13,117)
Farm production per \$1.00 of nonfeed costs	0.94	1.05	1.09	1.06		1.08	1.09	0.89
Farm production per man	91,470	150,481	202,287	163,094		157,502	165,140	68,739
Financial summary								
Cash operating income	225,498	592,013	1,205,644	691,596		659,710	1,260,704	205,843
Inventory change	(21,582)	3,035	(10,665)	(5,084)		16,368	29,469	1,365
Accts. receivable (net change)	1,266	2,849	7,554	3,833		3,879	7,381	(224)
Farm products used	345	845	2,057	1,082		1,377	1,430	902
Less purchased feed	18,448	47,645	80,574	51,276		60,116	94,848	28,731
Less purchased livestock	80,029	312,508	624,835	354,937		310,630	709,634	66,118
Adjusted gross farm income	107,048	238,593	499,185	285,217		310,588	494,502	113,037
Cash operating expense	49,184	107,975	214,231	126,059		132,560	209,343	60,834
Prepaid expense (-if increased)	(1,757)	(3,055)	(3,455)	(2,930)		(3,464)	(1,553)	(1,889)
Accts. payable (+if increased)	0	(38)	(127)	(55)		(301)	0	92
Farm-produced inputs	31	30	144	61		23	215	121
Total operating expense	47,457	104,910	210,791	123,133		128,816	208,004	59,157
Income before depreciation	59,591	133,684	288,394	162,083		181,772	286,499	53,880
Less depreciation	13,861	24,091	50,182	29,288		34,665	54,145	9,908
Capital account adjustment	526	409	253	388		114	492	687
Net farm income *	46,257	110,002	238,464	133,184		147,221	232,846	44,659
(operator's share) *	33,499	49,917	108,255	62,697		67,830	122,918	23,667
Labor & mgt. income per operator	8,641	27,236	44,343	28,506		41,063	42,029	1,349
Rate earned on investment, %	5.17	7.28	7.89	7.43		7.74	8.08	4.20

Note: Variations in totals are due to rounding to the nearest dollar. Northern Illinois includes both northern and central Illinois.

* Interest expense deducted from operator's share only.

Table 26a. 1990 Average Operating Costs, Investments, and Land Use by Size and Months of Labor for Illinois Beef Farms

Area of state	Northern Illinois				Months of Labor			Southern Illinois
	180-339	340-799	Over 799	All Farms	Your Farm	21-27	31-39	
Range in size (total acres)	16	49	24	89		11	12	
Number of farms								24
Some costs and returns per tillable acre								
Soil fertility	29.09	38.83	39.47	38.44		36.67	40.01	25.13
Pesticides	20.6	24.74	24.74	24.49		23.21	20.16	11.48
Seed and other crop	17.8	19.11	20.61	19.73		17.66	21.4	12.57
Crop total	67.49	82.78	84.82	82.66		77.54	81.58	49.18
Light vehicle and utilities	10.29	8.3	7.19	7.92		8.37	9.2	7.61
Machinery repairs, supplies	28.1	25.82	21.62	23.98		21.5	21.79	22.54
Machinery hire	12.72	10.25	8.11	9.41		8.01	9.6	6.63
Fuel and oil	16.11	15.86	15.72	15.81		14.31	16.63	14.13
Machinery depreciation	42.64	33	35.45	34.86		35.84	41.18	19.17
Power and equipment total	109.86	93.24	88.09	91.97		88.04	98.4	70.07
Drying and storage	3.02	5.07	3.21	4.03		3.98	4.41	1.54
Building repair	5.47	8.69	4.84	6.63		3.69	10.09	5.02
Building depreciation	18.83	18.69	14.45	16.67		19.93	18.18	5.92
Building total	27.32	32.45	22.5	27.33		27.6	32.68	12.48
Labor, unpaid	70.72	36.65	22.04	32.11		32.58	24.97	49.99
Labor, hired	13.31	19.06	18.72	18.49		21.48	24.73	14.73
Labor total	84.02	55.71	40.76	50.6		54.06	49.71	64.72
Value of feed fed	249.34	263.28	237.9	250.18		262.35	269.2	171.15
Capital purchases	56.86	54.45	62.36	58.4		51.27	90.51	26.36
Operator interest paid	43.07	60.94	51.7	55.25		59.82	42.21	27.04
Crop returns	317.83	324.61	322.98	323.35		318.65	339.8	187.11
Livestock return above feed	146.8	180.15	167.14	171.56		174.92	193.36	91.16
Value of farm production	474.71	511.94	496.33	501.83		499.63	542.12	286.2
Total nonfeed cost	507.2	489.02	453.34	473.29		461.73	497.96	321.15
Management returns	-30.15	23.8	43.24	29.23		38.08	44.69	-33.21
Farm investment								
Livestock inventory	103,157	240,513	466,907	276,870		279,009	525,483	116,954
Grain inventory	46,371	99,460	212,041	120,275		124,832	206,865	46,018
Remaining cost in machinery and auto	13,053	35,465	94,368	47,320		47,490	95,624	16,941
buildings and fence	27,492	48,352	66,472	49,488		58,823	75,957	8,727
soil fertility	668	0	0	120		0	0	0
Value of land (current)	395,118	852,170	1,902,462	1,053,227		1,130,408	1,696,768	404,949
Total farm investment	585,860	1,275,959	2,742,252	1,547,301		1,640,560	2,600,694	593,589
Total investment per acre	2,300	2,412	2,468	2,430		2,304	2,600	1,073
Machinery invest. per till. acre	58	76	94	83		76	105	43
Percent tillable land in								
Corn and corn silage	56.7	69.8	68.9	68.4		64.9	72	33.5
Soybeans	14.1	10.8	16.3	13.7		16.3	12.9	19.3
Wheat	1.9	1.1	1.3	1.2		0.4	0.9	8.7
Other small grain	4.1	1.4	1.1	1.4		1.3	1.3	0.4
Diverted acres	4.2	7.4	5.5	6.3		6.7	6.3	10
All hay and pasture	18.2	8.9	6.3	8.3		10.2	5.9	24.7
Crop yields, bushels per acre								
Corn	142	138	137	138		137	143	109
Soybeans	50	51	49	49		49	49	35
Wheat	72	57	55	58		68	51	38

Note: Variations in totals are due to rounding to the nearest dollar. Northern Illinois includes both northern and central Illinois.

Table 27. 1990 Average Return, Costs, and Financial Summary by Size, Type, and Soil Rating for Part-time Illinois Farms that Use Less than 10 Months of Labor

Area of state	Northern 56-85			Northern 86-100			Southern 36-85		Livestock All Farms
	Grain <260 32	Grain >260 49	Grain >260 49	Grain <260 60	Grain >260 49	Grain >260 49	Grain <260 21	Grain >260 26	
Range in size (total acres) Number of farms									
Total acres in farm	169	469	469	167	403	403	171	449	205
Acres of tillable land	149	428	428	152	384	384	150	410	139
Soil rating on tillable land	76	78	78	94	92	92	58	60	55
Total months labor	5.0	6.6	6.6	4.9	6.5	6.5	7.3	7.0	7.0
Months of hired labor	0.2	0.6	0.6	0.1	0.3	0.3	0.1	0.5	0.2
Beef produced, hundredweight	19	22	22	2	7	7	12	24	119
Pork produced, hundredweight	3	57	57	12	6	6	31	55	603
Dairy cows, number	0	0	0	0	0	0	0	0	0
Dollar returns per farm									
Crop returns	42,593	121,456	121,456	49,007	122,132	122,132	27,787	92,303	19,884
Livestock returns above feed	597	1,593	1,593	307	207	207	1,238	2,506	21,495
Custom work	520	1,228	1,228	185	997	997	200	339	700
Other farm receipts	910	1,297	1,297	912	925	925	275	2,017	418
Value of farm production	44,620	125,573	125,573	50,410	124,261	124,261	29,499	97,164	42,497
Dollar costs per farm									
Crop expenses	10,961	31,925	31,925	11,877	27,282	27,282	7,936	27,269	5,441
Power and equipment	11,579	21,353	21,353	10,428	21,220	21,220	12,549	21,194	13,996
Building and fence	3,767	5,592	5,592	3,540	5,548	5,548	1,551	2,973	1,806
Labor	6,836	8,974	8,974	6,752	8,843	8,843	7,531	9,902	9,417
Livestock services and supplies	137	305	305	105	143	143	115	147	857
Taxes	2,570	7,379	7,379	3,657	8,160	8,160	1,235	3,513	1,287
Insurance and miscellaneous	2,039	3,880	3,880	2,095	3,830	3,830	1,331	2,989	2,009
Interest on nonland capital	5,362	10,697	10,697	4,824	10,021	10,021	3,480	7,818	6,443
Land charge or net rent	12,248	34,771	34,771	15,541	36,573	36,573	7,840	21,158	6,760
Total nonfeed cost	55,499	124,876	124,876	58,821	121,619	121,619	43,569	96,963	48,015
Capital account adjustment	61	1,346	1,346	1,409	874	874	0	115	238
Management returns	(10,817)	2,044	2,044	(7,001)	3,515	3,515	(14,069)	315	(5,280)
Farm production per \$1.00 of nonfeed costs	0.80	1.01	1.01	0.86	1.02	1.02	0.68	1.00	0.89
Farm production per man	106,094	228,811	228,811	122,330	229,983	229,983	63,265	158,967	73,113
Financial summary									
Cash operating income	48,081	124,137	124,137	50,984	118,550	118,550	33,630	100,972	56,251
Inventory change	(2,637)	3,609	3,609	(322)	5,635	5,635	(2,927)	(1,213)	1,553
Accts. receivable (net change)	497	2,069	2,069	597	1,521	1,521	111	(1,025)	0
Farm products used	126	259	259	62	232	232	146	445	308
Less purchased feed	1,159	3,465	3,465	740	1,566	1,566	906	1,792	12,665
Less purchased livestock	288	1,035	1,035	169	111	111	554	221	2,950
Adjusted gross farm income	44,620	125,574	125,574	50,410	124,261	124,261	29,499	97,164	42,497
Cash operating expense	25,423	61,687	61,687	27,034	57,516	57,516	18,720	50,273	18,864
Prepaid expense (-if increased)	(356)	(1,310)	(1,310)	698	(620)	(620)	(194)	(92)	180
Accts. payable (+if increased)	(49)	85	85	(26)	210	210	0	38	0
Farm-produced inputs	89	208	208	21	212	212	113	437	0
Total operating expense	25,104	60,669	60,669	27,725	57,317	57,317	18,638	50,654	19,043
Income before depreciation	19,516	64,905	64,905	22,685	66,944	66,944	10,861	46,509	23,454
Less depreciation	6,284	10,722	10,722	4,250	9,388	9,388	6,153	8,101	6,656
Capital account adjustment	61	1,346	1,346	1,409	874	874	0	115	238
Net farm income *	13,293	55,529	55,529	19,844	58,430	58,430	4,708	38,523	17,035
(operator's share) *	3,263	21,384	21,384	8,661	20,184	20,184	(283)	10,325	8,856
Labor & mgt. income per operator	(4,337)	9,901	9,901	(521)	11,767	11,767	(6,612)	9,017	3,663
Rate earned on investment, %	2.09	5.43	5.43	3.38	5.46	5.46	(1.33)	5.35	3.78

Note: Variations in totals are due to rounding to the nearest dollar. Northern Illinois includes both northern and central Illinois.
* Interest expense deducted from operator's share only.

Table 27a. 1990 Operating Costs, Investments, and Land Use by Size, Type and Soil Rating for Part-time Illinois Farms that Use Less than 10 Months of Labor

Area of state	Northern 56-85			Northern 86-100			Southern 36-85		
	Grain <260	Grain >260	Livestock	Grain <260	Grain >260	Livestock	Grain <260	Grain >260	Livestock
Range in size (total acres)	32	49	49	60	49	13	21	26	8
Number of farms	32	49	49	60	49	13	21	26	8
Some costs and returns per tillable acre									
Soil fertility	35.03	32.43		37.25	32.69	32.75	23.35	30.25	21.79
Pesticides	22.75	22.18		22.44	22.45	18.80	15.72	19.92	5.86
Seed and other crop	16.00	17.91		18.35	15.85	18.68	13.78	16.34	11.42
Crop total	73.78	74.51		78.04	70.98	70.23	52.85	66.51	39.07
Light vehicle and utilities	9.06	3.77		8.30	4.03	15.20	10.66	4.09	13.34
Machinery repairs, supplies	20.77	13.30		20.65	12.54	36.71	17.33	15.11	27.92
Machinery hire	9.33	6.97		13.13	11.03	11.88	7.81	7.05	4.34
Fuel and oil	10.74	7.71		9.00	8.48	17.99	11.42	7.83	15.15
Machinery depreciation	28.04	18.08		17.43	19.12	26.24	36.36	17.63	39.77
Power and equipment total	77.94	49.84		68.53	55.21	108.03	83.58	51.70	100.51
Drying and storage	6.81	4.55		8.28	7.08	12.40	2.55	3.53	0.40
Building repair	4.30	1.55		4.49	2.05	10.87	3.16	1.59	4.53
Building depreciation	14.25	6.95		10.49	5.30	21.07	4.62	2.13	8.03
Building total	25.36	13.05		23.26	14.44	44.34	10.33	7.25	12.97
Labor, unpaid	43.76	18.71		42.58	21.65	41.35	49.67	22.52	65.44
Labor, hired	2.25	2.23		1.79	1.36	21.28	0.49	1.63	2.19
Labor total	46.01	20.94		44.37	23.01	62.63	50.16	24.15	67.63
Value of feed fed	6.42	6.12		3.45	1.86	223.44	7.14	6.81	157.99
Capital purchases	61.99	32.30		46.09	24.52	39.50	46.23	29.57	126.90
Operator interest paid	20.24	16.28		21.61	18.52	41.18	12.77	21.48	46.17
Crop returns	286.70	283.48		322.02	317.76	291.77	185.07	225.15	142.80
Livestock return above feed	4.02	3.72		2.02	0.54	200.14	8.24	6.11	154.36
Value of farm production	300.35	293.09		331.25	323.30	515.12	196.47	237.01	305.18
Total nonfeed cost	373.58	291.46		386.51	316.43	496.16	290.18	236.52	344.81
Management returns	(72.82)	4.77		(46.01)	9.15	20.65	(93.71)	0.77	(37.92)
Farm investment									
Livestock inventory	2,334	3,657		651	1,660	36,097	2,492	4,718	26,029
Grain inventory	27,006	64,212		33,139	76,023	42,382	14,811	54,507	10,701
Remaining cost in									
machinery and auto	8,175	17,968		4,665	13,968	11,294	10,313	14,895	11,343
buildings and fence	15,932	16,519		11,594	12,656	32,589	4,565	3,115	11,222
soil fertility	0	0		9	160	0	0	142	0
Value of land (current)	272,187	772,685		345,365	812,732	404,699	174,230	470,174	150,231
Total farm investment	325,633	875,041		395,423	917,201	527,062	206,412	547,551	209,525
Total investment per acre	1,929	1,866		2,364	2,277	2,489	1,205	1,220	1,021
Machinery invest. per till. acre	55	42		31	36	56	69	36	81
Percent tillable land in									
Corn and corn silage	50.3	49.1		51.0	44.5	55.6	30.8	33.3	29.5
Soybeans	36.9	37.2		38.6	42.8	29.3	34.9	41.5	19.8
Wheat	4.9	3.8		0.4	2.2	3.3	17.1	18.1	10.8
Other small grain	0.7	0.1		0.5	0.2	1.1	0.0	0.0	0.0
Diverted acres	5.2	5.4		4.8	4.1	4.9	7.6	4.5	13.4
All hay and pasture	1.9	1.4		1.3	0.7	5.2	4.0	1.9	20.1
Crop yields, bushels per acre									
Corn	126	134		138	140	124	96	116	87
Soybeans	42	45		47	47	45	31	34	25
Wheat	63	61		60	58	68	47	46	35

Note: Variations in totals are due to rounding to the nearest dollar. Northern Illinois includes both northern and central Illinois.

ASSOCIATIONS, FIELD STAFF, AND COOPERATORS ENROLLED

Associations and Field Staff

Associations and Field Staff

BLACKHAWK 741

Kristian S. Lauritzen
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Benjamin A. Greiner
Alan Petersohn
Jeffrey L. Johnson
Rodney B. Gieseke
Garrett Plumley

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Thomas H. Jennings
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Mike R. Shepherd
Timothy D. Phelps
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Robert Rhea
David A. Ward

SANGAMON VALLEY 651

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James E. Phelan
Aaron W. Liesman
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Thomas J. Nolte
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Bradley E. Yockey
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NORTHEASTERN 370

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Gary E. Bressner
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Les A. Marti
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EASTERN 554

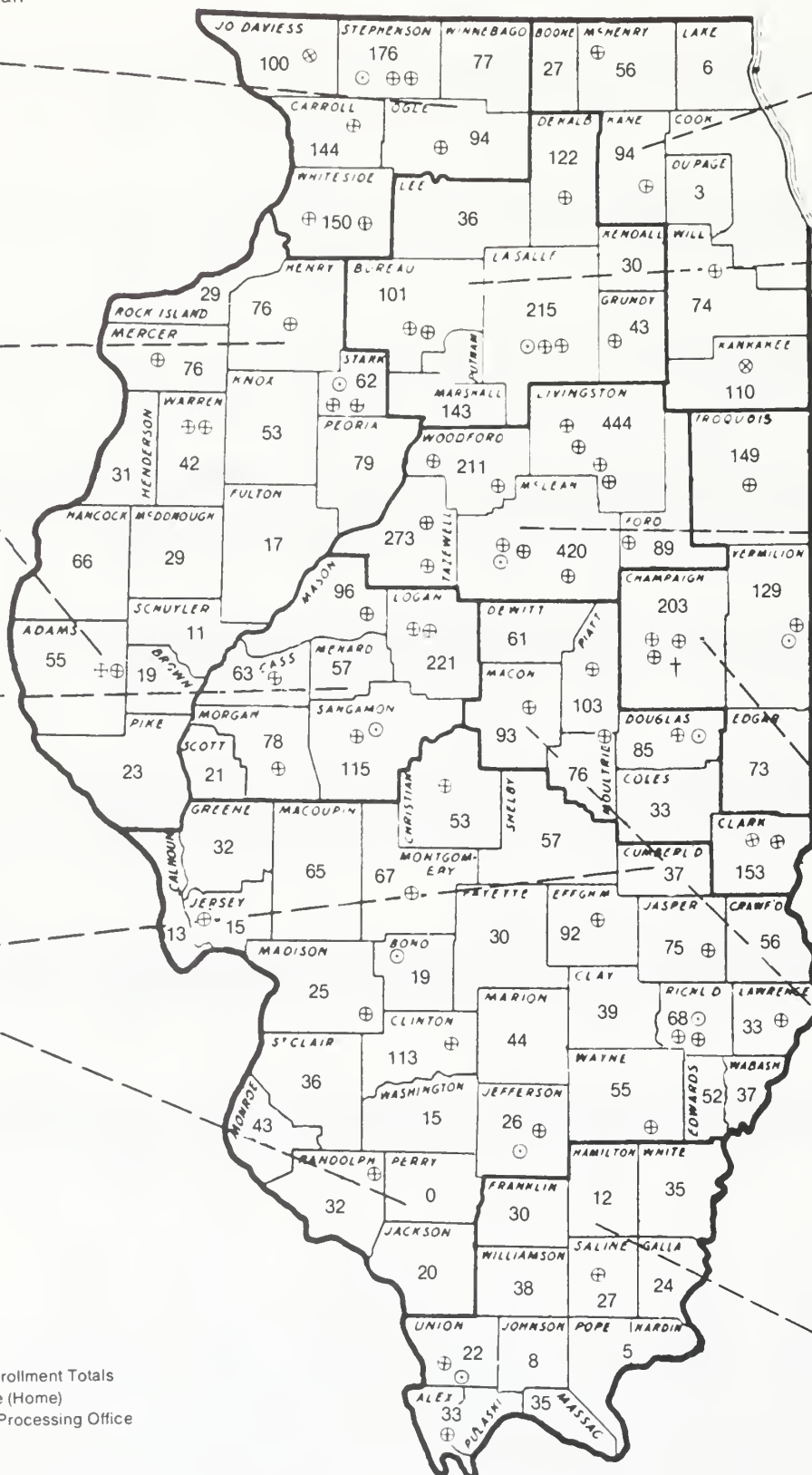
Robert K. Boesdorfer
Howard Peverly
Bruce E. Burk
Dwight D. Raab
Donald E. Becker

EAST CENTRAL 604

Rolland D. Gustafson
James E. Cullison
Gary E. Connelly
Jeffrey D. Lewis
Robert Daggett
Richard Thomas

SHAWNEE 269

Robert D. Kieseoms
Douglas E. Hileman
Mark A. Taake



RETIREES

Photo not
available

Stephen Kingry. Reared on a farm in Vermilion County, Kingry attended Illinois State University from 1949 to 1951. He then transferred to Eastern Illinois University for a year. After that, he continued his college pursuits at the University of Illinois, graduating with honors in 1953 with a major in agriculture education.

During the next two years, Kingry served his country in the U.S. Army, completing his tour of duty in September 1955. He started his professional agriculture career in February 1956 with a position as vocational agriculture instructor at Farmington. Kingry held this position for 9½ years, and during this time he pursued graduate work at the University of Illinois. He was awarded the master's degree in agriculture education in 1960.

Kingry taught briefly at Central High School in Clifton in the fall of 1965. He then began his career with Illinois Valley FBFM in Lee and part of Bureau counties in December of that year. His timeliness and dependability enabled him to increase the number of cooperators that he served to more than 180 in the mid-1970s. With a singleness of purpose, Kingry and his wife, Patricia, set timeliness goals in record processing and encouraged the rest of the state's field staff to aim at them. His retirement from FBFM in March of this year ended a career that spanned just over 25 years serving FBFM cooperators in the Lee County area.



Harry White. This Iroquois County native served in the Navy during 1946 and 1947. After this commitment, he returned to the farm. In January 1951, he was called back into active duty during the Korean Conflict and served until May 1952. In the fall of 1952, White enrolled at the University of Illinois. He graduated with honors in 1956 with a degree in agriculture education.

His first vocational agriculture teaching position at Minooka High School occupied the next 5½ years of his life. During this time, White also pursued graduate work at the University of Illinois, receiving a master's degree in education in 1961. In July 1961, he accepted a position as vocational agriculture instructor at Fairbury.

In January 1966, White began his career with Eastern FBFM. Initially he was serving FBFM cooperators in all of Vermilion and Iroquois counties. His educational philosophies and quality service contributed significantly to a growth in enrollment. The association expanded from two to five staff members during his tenure.

Harry White retired in June 1989 after more than 23 years with FBFM. Before his own retirement, he helped a number of farmers across Illinois in the retirement planning process through his work with the Cooperative Extension Service Retirement Planning Program.

White's impact as an FBFM staffer-person reached far beyond Illinois. His 8 years of service as secretary-treasurer of the National Association of Farm Business Analysis Specialists certainly contributed to the professional development of that organization.

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Urbana, Illinois

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